DOCUMENT RESUME

ED 315 847 EA 021 514

AUTHOR	Billings, Jessica C., Ed.
TITLE	Creating Schools for the Twenty-First Century. New Horizons for Local School Leaders.
INSTITUTION	Illinois Association of School Boards, Springfield.
PUB DATE	89
NOTE	167p.
AVAILABLE FROM	Publication Sales, Illinois Association of School Boards, 1209 South Fifth Street, Springfield, IL 62703 ($12.00 plus $2.00 postage per order).
PUB TYPE	Collected Works - Conference Proceedings (021) -- Information Analyses (070) -- Viewpoints (120)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Administrator Guides; Educational Finance; Educational Innovation; *Educational Trends; Elementary Secondary Education; *Futures (of Society); *Global Approach; *Long Range Planning; Moral Development; School Community Relationship; Social Change; Technological Advancement; Technology; World Affairs
IDENTIFIERS	Illinois

ABSTRACT

The student population in the 21st century will be distinctly different both in culture and in need; the American educational system must prepare future generations for a global society. Recreating the excitement of the Education for the Twenty-First Century Symposium held in April 1989, this book is more than mere reprints of the speeches made by the 19 speakers; instead, it synthesizes the speakers' remarks--in some cases supplemented by additional research--and places them into context. The speakers at the symposium, carefully chosen to present the full array of issues and challenges that face today's school officials, did not offer blueprints for the schools of the 21st century; rather, they suggested visions of schooling for the future and they provided information and ideas to help school leaders back up the visions with long-range plans. Unlike the format of the symposium, where the speeches fell into three categories, this book is divided into five sections: "Futurevisions," "Current Issues," "Getting from Here to There," "Teaching and Learning," and "Technology." The appendix contains a list of contributors, the names of symposium committee members, and a list of the authors. (KM)

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New horizons for local school leaders

Creating schools for the twenty-first century

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New horizons for local school leaders

Creating schools for the twenty-first century

Jessica C. Billings, editor

Design, Diane M. Cape
Cover Photo, Ross Hulvey III

Published by the
Illinois Association of School Boards
1209 South Fifth Street
Springfield, Illinois 62703

200 West 22nd Street, Suite 249
Lombard, Illinois 60148

The Illinois Association of School Boards is a voluntary association of local boards of education and is not affiliated with any branch of government.

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October, 1989

ACKNOWLEDGEMENTS

The Illinois Association of School Boards is indebted to Jack L. Edwards for his contributions to this book, which are far more extensive than the articles that carry his name. He devoted many hours to reading and commenting on early drafts of the book. His suggestions added a valuable perspective from his experience as a school board member and teacher, and did much to shape the book.

Thanks also to Marilyn Turnbull of the IASB Communications Department for her research and secretarial assistance and to IASB's long-suffering typesetters, Pat Tatman and Tracy Snider.

Opinions expressed in this book do not necessarily represent the views of the Illinois Association of School Boards.

FOREWORD

You've been hearing a lot lately about "preparing for the future," and you'll be hearing more in next few years. The turn of the century is an irresistible focal point—a powerful, if artificial, reminder that forces us to think about how fast the world is changing and how uncertain the future really is.

To hear some folks talk about "preparing for the future," you'd think our institutions, and especially our public schools, were runaway 18-wheelers, careening south in the northbound lane, heedless of the red "wrong way" signs flashing by. To hear others, you'd think some mysterious alchemy will at some point take over, and "the future" will take care of itself.

But those who attended the Education for the Twenty-First Century Symposium in April, 1989, left with a more balanced, thoughtful perspective. The lineup of 19 blue-ribbon speakers left participants feeling that public education has served its purpose well for many years now—but the purpose has changed and will change more. Schools need to change to meet changing needs—but they can change. And we can mold those changes. We have the resources and the knowledge we need to do that.

That was the profound and inspiring message that the Symposium committee wanted to extend far beyond the thousand people who were able to attend the event itself.

The committee wanted more than mere reprints of the speeches. We wanted a book that would synthesize the speakers' remarks and place them into context. We wanted a book that would recreate the excitement of the symposium itself.

This is the result—*New Horizons for Local School Leaders: Creating Schools for the Twenty-First Century.*

Speakers at the symposium did not offer blueprints for the schools of the twenty-first century. Rather, they suggested visions of schooling for the future. And they provided information and ideas to help school leaders back up our visions with long-range plans.

This book attempts to convey those visions, as well as report the information and ideas.

There is much more to be said about schooling in the twenty-first century than is contained here. It is possible that the best thinking on the subject has not yet been done.

It is our hope that this book will spark the thinking, the inspiration, and the action that will get us from here to there—and beyond.

Carola McMullen
Symposium Chairman

EDUCATION FOR THE TWENTY-FIRST CENTURY: A SYMPOSIUM

"The Symposium had a profound effect on me and on several others with whom I have talked. Participants are now talking about the schooling of the future and less about buses and basketballs." That's how Clayton Thomas of Illinois State University described the Education for the Twenty-First Century Symposium.

"I was aware that technology will play an important role in the twenty-first century and that was substantiated," Thomas wrote. "However, I came away from the Symposium with the overwhelming realization that the student population will be distinctly different both in culture and in need. The pace at which we are becoming interdependent upon other nations made me realize that we must prepare future generations for a global society. The cultural differences extend from the inner cities of the United States to all of the other continents. At a time when we don't even have sufficient knowledge of Canada and Mexico, this is an incredible challenge."

"I really believe the conference was a catalyst for a refocused state agenda," commented Stephanie Marshall, director of the Illinois Mathematics and Science Academy. "I think it would be enormously useful to review the trends (John Naisbitt) has enumerated and extrapolate their implications for education. These include implications for curriculum, instructional strategies, assessment practices, at-risk youth, preschool, and so forth . . . I also thought there were common themes relative to the need to restructure schools and schooling—not just cosmetic alterations—but the substantive restructuring and reshaping of the educational delivery system."

The comments from two participants—which were echoed in substance in discussions that took place between sessions of the Symposium—indicate that the event did what it was intended to do: provide a "time out" for school officials from the thousand and one mundane concerns that eat up their days and allow them to recapture the vision that led them into public education.

The symposium planning committee chose speakers who would present the full array of issues and challenges that face school officials as we make decisions on behalf of children who will graduate in the next century.

Some of those issues involve space-age technology—new, responsible uses for technologies that we have now, and technologies yet to come. Others focused on the eternal human issues that have always challenged humankind and will continue to do so for as long as our species endures.

The planning process for the Symposium is itself a harbinger of a broadening base of interest in and support for public education. Members of the planning committee cast their nets far and wide, using their personal and professional associations to locate speakers with expertise and breadth of vision.

Further, committee members approached organizations and institutions of all kinds seeking financial support for the Symposium, and found a generous welcome. Some 31 organizations and individuals made financial contributions. These were used for scholarships, to allow school districts that could not afford the registration fee to send a delegate to the Symposium. Other organizations contributed equipment, personnel, and services. (See the list of contributors on page 153.)

The broad base of involvement and support that created this Symposium may be seen as a prototype for the kind of wide-ranging involvement and support that will be needed for public schools as they meet the needs of children who will live out their lives in the twenty-first century.

At the Symposium, speakers were divided into three categories: general futures, educational futures, and future strategies. Those who attended the event will note that the categories have been changed for the book, and that the titles of the articles aren't always the same as the titles of the speeches. The editor and writers found that, like creative imaginative people everywhere, the speakers overflowed the boundaries of their categories and refused to be confined within the titles of their speeches.

The substance of their ideas—in some cases supplemented by additional research inspired by their remarks—is reported here.

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FUTUREVISIONS

"We should all be concerned about the future because we will have to spend the rest of our lives there."

—Charles Franklin Kettering

FUTUREVISIONS

Grant me the courage to change what I can change,
The serenity to accept what I can't change,
And the wisdom to know the difference.

This simple prayer often seems to cover the bases, especially when the situation is complicated or overwhelming. And that just about describes the state of public education as we gaze ahead and realize that—as one joke has it—the future isn't what it used to be.

The Future has been the subject of much speculation, prophecy, and downright fantasy over the years. Futurevisions have run the gamut of our hopes and fears: alien life-forms, inhuman hyper-intelligence, totalitarian regimes, anarchy. And there have been the utopias, both the scientific and the back-to-Eden variety.

Now, as we approach the compelling if artificial dividing point, the New Millennium, the prophecies seem to be coming down to earth a bit. There's less fantasy and more serious attempts at forecasting—partly because we now have the tools to do serious forecasting and partly because the new century is, after all, nearly upon us.

A lot can happen in a decade. And a lot can stay the same.

A quick trip back a decade, reminds us that some parts of life have changed more than we would have dreamed possible—largely due to technology. In 1978, *U.S. News and World Report* ran an article titled "New Gadgets Give TV a Run for Its Money." Videodiscs, cable TV, and videotape recorders (selling then for around $1,000) would, predicted the magazine, change the face of home entertainment—especially "if and when the price (of videotape recorders) falls to $300 or $400, as many expect . . . ."

In 1978 *Science Digest* was advising readers that microwave ovens deserve a closer look. A glance at the 1978 issue of *Reader's Guide to Periodical Literature*, which indexes many popular magazines, reveals that articles about microcomputers appeared in hobbyist magazines like *Popular Electronics*, but only one article was listed in a general-interest magazine. *Mechanics Illustrated* was amazed that year by a "Copier That Does It in Color." Compact discs were not mentioned a decade ago; but in 1988, a list of articles about the CD's and CD players filled nearly four full pages in *Reader's Guide*.

Many of you reading this book will remember your first pocket calculator, your first encounter with a photocopy machine (some may remember carbon paper), and your first brush with a computer. The children in your schools don't remember life without those wonders; and in fact don't consider them wonders at all, but facts of life, almost as basic as electricity and automobiles.

Other changes have not been so wondrous. In 1978, *Reader's Guide* listed ten articles on cocaine, most of them reports of research. One, in *People* magazine, giddily declared "In Showbiz, the Celebrities With a Nose for What's New Say the New High Is Cocaine." Most publications don't seem to be taking a lighthearted attitude toward cocaine these days. Crack was not mentioned at all in the 1978 index. AIDS was not mentioned, nor was Alzheimer's disease. References to "Aged" and "Aging" accounted for about two pages of entries in 1978. By 1988, those headings took up more than four pages plus more than 20 cross-references.

You didn't hear much in 1978, about children committing suicide or worshipping Satan. Unless you lived in New York, Chicago, or Los Angeles, you didn't hear much about kids joining gangs.

On the other hand, a scan of several issues of the 1978 *New York Times* shows that much has remained depressingly the same. That year, President Jimmy Carter pledged to cut foreign oil imports and announced that the U.S. would, by the end of the year, have in place an energy policy designed to reduce dependence on foreign oil. He also announced the outlines of a national health care plan. Mideast talks centered on the issue of the West Bank, and Carter expressed fears that "time is running out" in the mideast. South Africa promised to take action against police charged in the death of several black persons.

As the twenty-first century approaches, we begin to realize that coming decades are likely to be, like the ones that have preceded, a series of choices, compromises, and dilemmas. We see that technology and scientific discoveries don't, in themselves, solve problems—in fact, they create more choices, compromises, and dilemmas.

In fact, it's pretty clear that, to haul out an old gag one more time, we have met the future, and it is us.

Whatever we can't predict about the future, there are two things we can say, one with a high level of certainty and the other with an even higher level of certainty. We can be pretty sure that the future will continue to bring change, and if the immediate past is any indication, that change will come faster and faster.

We can be even more certain that the future will include people.

And there is another thing we can say: people will be pretty much what they've always been. If history teaches anything at all, it is that, no matter what kind of shape the world is in—whether a particular society is enjoying peace and prosperity or suffering the hells of war, famine, revolution or economic collapse—people still need and want pretty much the same things. People always seek to form families and stable societies, to love, to create, to worship. They always seem prone to be greedy and to fight and cheat and take the easy way out whenever they can.

People block progress and they resist change. They rise to challenges and solve insoluble problems. And, again and again, the human spirit rises up, exceeding all expectation, and saves itself from annihilation.

It is probably people's stubborn insistence upon being people that led one wag to observe that the future will be very much like the present, only longer.

It could also be said that the future will be very much like the present only more so. Many of the issues and opportunities will be the same, with one big difference. That difference is an increasing sense of urgency that is only partly explained by the turn of the century and the accompanying hype. The approach of the year 2000 has focused our attention on what has for many been a vague sense that things are happening too fast. Breakthroughs in science and technology are happening more rapidly than we can assimilate them—let alone deal with their implications and figure out how best to use them.

Trends that were mere undercurrents in society are coming to crisis. The thinning of the atmosphere, not long ago the concern of a few worrywarts, is now of concern to everyone who doesn't want to develop skin cancer, a group that includes quite a few people. Classrooms are filled with children who once represented a negligible minority, children from households where there is only one adult, generally a mother, who is trying desperately to hold a job, stay above the poverty line, keep a house, and rear children.

Demographer Harold Hodgkinson pointed out that a fad "starts on one coast, loops to the other coast . . . then moves in toward Fargo." More substantive trends seem to do the same thing. That makes middle America fairly apprehensive as it looks at Los Angeles and New York, with their unbreathable air, legions of homeless, and streets governed by drug dealers and youth gangs.

To paraphrase Charles Dickens: This is the best of times, it is the worst of times.

Never has there been such an outpouring of creativity in all fields of endeavor—the arts, the humanities, medicine, technology, the sciences. Never has there been so much money or such a wealth of things to buy with that money.

And never, in this nation (except perhaps during the depression years) have there been so many people living in poverty, homeless, hungry, jobless.

Never have there been such medical marvels—machines that monitor every function of the human body, artificial hearts and lungs, babies conceived in ways never dreamed of by nature. Yet in the face of diseases like cancer and AIDS, we are as terrified (if not quite as helpless) as medieval villages threatened by plague.

We have the capacity to despoil and destroy the planet earth and all her inhabitants a thousand times over. And we have the capacity to keep the earth a fit place for human beings to live.

We are, in short, at a point in human history when we have the information and the technology we need to do almost everything that needs to be done. What we need now are the awareness and the humanity to do it.

And that brings us into the realm of public education. Our public schools are, for better or worse, the holders of the future. As Harold Hodgkinson points out, "Today's kids are going to become tomorrow's adults. They are the only potential adults we have." And the majority of those kids are in the keeping of the public schools, at least from the ages of five to sixteen.

Moreover, the schools are society's only shot at many of these children. That's one big difference between yesterday and tomorrow. The job of the public schools has always been to prepare children to be productive adults who can participate fully in society. And that, in essence, hasn't changed.

But two things have changed. The first is that the requirements to be an effective adult have changed and continue to change. The second is that institutions that used to foster certain values in children—institutions such as family, church, and neighborhoods—have weakened.

Because of these, it seems impossible for schools to do the job the way it has been done in the past. Public schools are in a state of transition, and states of transition are always hard. The old no longer seems to work, the new hasn't yet taken shape. Yet the schools must continue to cope with the new breed of children entering the classroom. We don't have the luxury of taking time-out for planning, regrouping, and rebuilding. It has to be done on the run, day by day, amidst a thousand tasks and details clamoring for attention. And we don't have a blueprint. We don't even know what the finished product will look like.

If this thought doesn't scare you, nothing will: Here we are, in this maelstrom of change—change that is being thrust upon us, and changes that need to be made. And all we have to work with is people, with all their fears and limitations and selfishness.

Imagine how satisfactory it would be to design a school system without having to take into account a hundred employees, each looking out for his or her own interests and each protecting his or her own turf. Think what could be accomplished if it weren't for all those recalcitrant kids with their raging hormones, their home problems, their peer pressures. Think how easy it would be to create constructive change if all those folks—plus officials at the local, state, and federal levels—could see what needs to be done as clearly as you do.

But as things stand, it is not easy at all to create change. It is, in fact, one of the hardest tasks you can tackle. It's hard even to change yourself. How many times have you made the same New Year's resolutions? How many times have you kept a single one until June? Don't feel badly; you're not alone. A newsletter for executives announces that fewer than 25 percent of New Year's resolvers manage to keep their vows that long.

If it's that hard for one intelligent individual to change something he or she has a high degree of control over, it stands to reason that it's going to be hard to change a structure involving as many people as the public school system.

People resist change for all sorts of reasons. Fear is one big reason. Folks may or may not like the way things are, but at least they're used to it, and they know how to function. All of us have felt that kind of resistance at one time or another, and most of us know at least one or two people who react that way all the time: change the weekly staff meeting from Monday morning to Tuesday and they panic.

Some resist because they have turf to protect, whether that turf consists of power or security. This kind of resistance is usually pretty obvious to everyone except the turf protector, who has probably convinced himself or herself that the resistance is based on higher ground.

And so on. Any discussion of obstacles to change very quickly gets into deep psychological waters that can't be explored here. (Check the self-help section of any good book store for volume after volume on the subject.)

But if people are the obstacle to change, it is also true that the human spirit is the only hope we have for change. And the human spirit does rise up, often when and where we least expect it. People are way ahead of their self-styled leaders and the institutions that support the hierarchy of leadership.

Recently, *Newsweek* found 50 "everyday heroes" to highlight (July 10, 1989 issue). These heroes are simply people who are doing something concrete to make the world a better place. They include: a man in Alaska who organized a wildlife-rescue effort after the Exxon tanker spill. A New Orleans woman who has created and is enforcing a drug-free zone in the housing project where she lives. A North Dakota woman who founded the Incest Awareness Project, and works to prevent child abuse and help victims. A Harvard senior who returned to her working-class Boston neighborhood to create a tutoring program for welfare mothers and children. Two Kentucky teachers who gave up their retirement benefits and took 20 percent cuts in salary to keep their preschool open, hoping that they can break the grim cycle that results in 71 percent of their county's adults dropping out of high school. A former heroin addict whose first husband died from drugs, who counsels wives of prison inmates, listening, accompanying them to court, and helping them find work.

We can learn some things from these accounts. For example, it is true of all the people mentioned that:

- They don't take on the world. Each has chosen one well-defined project and given it everything.

Author Wendell Berry, in a commencement address reported in *Harper's Magazine* (September, 1989), observes that there are "no national, state, or county problems, and no national, state, or county solutions. . . . The problems, if we describe them accurately, are all private and small."

He observes that the "planetary versions—the heroic versions—of our problems have attracted great intelligence. Our problems, as they are caused and suffered in our lives, our households, and our communities have attracted very little intelligence." The *Newsweek* Fifty, and the other similar small-scale heroes we occasionally encounter have brought their intelligence to bear on real, immediate problems.

- They don't wait for organizations and bureaucracies to respond to a need. Each has taken the initiative and done what needs to be done. In some cases, they have had to circumvent organizations.

Consultant Bill Banach, in the 1988 edition of his annual Top Ten Educational Issues, observes that:

"While the context in which change is occurring is large, the means to accommodating change is small. Problems are not solved by governments or business or the educational community. Problems are solved by people talking things over. In fact, it's been estimated that well over 90 percent of all problems are solved by people working in groups of two or three—sifting through solutions, laughing off mistakes, coming to consensus."

- Each has chosen a cause near to his or her heart. What shines through their stories is a sense that they aren't doing something they felt they "ought" to do, but something they were compelled from within to do.

In short, they have vision.

School board members, by and large, have vision—at least they start out that way. What else would draw them into public service that is more often than not burdensome and tedious? The best educators have vision, at least initially. What else would draw a man or woman with the potential to succeed in any field of work (which is true of a real educator) into a profession that is demanding and lacking in spectacular financial rewards and status?

Those visions get lost in the day to day routine details of keeping school buildings open and classrooms functioning. But without the visions, we never get beyond a school system that stays open and "functions."

We are a society addicted to plans, systems, lists, how-to's. Take a look at the magazines on the newsstand or the professional literature you receive. It's dominated by bare-bones, no-nonsense ways to get things done. Ten ways to . . . thirty days to . . . the end-all system that will . . .

The trouble is, those lists and systems and how-tos don't get the job done. If they do, why don't we all have thin thighs, exquisitely organized desks, and buckets and buckets of money? Why, after managing-by-objectives, strategically planning, and interfacing at management retreats, don't our organizations run like clockwork? Why, instead, do we feel guilty because we can't even follow a simple system that—it's very clear—would lead us straight to the desired goal?

It's because the plans and systems are somebody's abstract idea of what "should" work. And they may work—but only if they are fired with the energy of a vision.

A vision isn't a plan or a document. It isn't a goal. A vision is a vivid image of an intense desire. It comes from within and has little to do with what is practical or possible. Yet without vision, very little is possible.

Vision is the flame that energizes, motivates and provides the will to plug on even during the inevitable letdown that comes when it's time to start translating the vision into reality.

There's another thing that helps, too; something that we don't hear much about in these earnest times: a sense of humor.

As Bill Banach sees it: "Forecasts and trend lines aside, it appears that we will relocate our temporarily misplaced sense of humor during the decade dawning. That's good news. Educators need to relax and stop the hand wringing. As my good friend says, 'Most of what we do doesn't even come close to brain surgery.' Look for more people to head into the 1990's sunny-side up."

And that may be the most hopeful futurevision of them all.—JCB

Sources

Consultant William J. Banach, known as a pioneer in school communications, survey research and issues management, helps school districts develop visions and plans for the next century through his VISTA 2000 Project. For information contact William J. Banach, 21969 Cimarron Lane, Romeo, Michigan 48065; 313/784-9888.

Educational Leadership, published by the Association for Supervision and Curriculum Development, The September, 1989, issue titled "Preparing Today's Students for Tomorrow's World" includes a number of excellent articles on education for the future. The issue also includes information on other resources, including such organizations as the World Future Society, a leading source of futures information; and ASCD's Educational Futurists Network. The issue costs $4 per copy; ask for stock number 61189148. Contact: ASCD, 1250 North Pitt Street, Alexandria, Virginia 22314-1403.

Omni, October, 1989; special issue: "Trends and Predictions for the Year 2000 and Beyond." Contact Omni Publications International Ltd., 1965 Broadway, New York, New York 10023-5965; 212/496-6100.

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WHO NEEDS EDUCATION?

The title of Diane Ravitch's address, "Who Needs Education?," is misleading. A more fitting title would have been, "How Can America Let Its Educational System Go Down the Drain?" for that is the real question she presents to the audience.

Ravitch portrays a striking contrast between the realities of American education today and her view of the ideal educational system of the future. Interspersed are questions that all of us engaged in the business of educating our children must answer such as: "What should students learn?" and even more basic, "Should everyone receive the same education?" The fact that there are no simple answers to these questions does not make them rhetorical, but instead sets the tone for her address and for education in the twenty-first century.

As viewed by Ravitch—and by many others—the American educational enterprise has failed to live up to its mandate during the twentieth century. Thousands of students never finish high school—let alone go on to postsecondary education. Worse yet, thousands that do graduate from high school cannot read, write, or perform the most basic mathematical computations. And, according to Ravitch, things are not getting better with time.

The pressing issue, as she sees it, is how this will affect our nation economically as well as socially. "The work place in American society increasingly requires skilled workers who can use high technology for planning, production, and quality control," she notes. These individuals are people who are, "masters of literacy, numeracy, problem-solving skills, decision-making skills and interpersonal skills."

Unfortunately, as a nation, we are far from producing enough individuals to meet the current and future demands of our economy. Further, the burden of this failure must fall primarily on our educational system.

Shifting quickly from these depressing realities, Ravitch outlines her vision of the ideal educational system of the future. In the future, education starts before birth and continues throughout life. Pregnant women receive instruction on how to stimulate the cognitive and emotional development of the child after birth, as well as proper care and nutrition before birth. At age three, all children are enrolled in pre-school where they are exposed to books, games, and activities that convey both academic knowledge and ethical and moral behavior. The facilities for the children are state of the art.

In elementary grades, students learn at their own pace and with instructional software. All children receive a powerful liberal arts education. However, they also receive training in the everyday technologies so that everyone knows how to use the tools and machines necessary for daily life. Upon graduation from high school, all children will have a full range of opportunities open to them. Some may go on to college and some may go directly to work. However, all will learn that, "their most important preparation for work is knowing how to learn."

In the future, teachers are highly respected, highly trained, and highly compensated professionals. They constantly engage in professional development activities. They know the children well because they will be assigned together for three years or longer. They also know the child's family situation and any problems that might affect school performance.

Likewise, parents are highly involved in the education of their children. Besides being involved in home, parents help out as volunteers in the school. They work in the library, music room, cafeteria and gymnasium. They also participate in the many artistic and cultural activities sponsored by the school.

School administrators are passionate about their work in the school of the future. All administrators have come from the ranks of teaching and most plan to return to teaching because that is where the power and prestige lie.

In short, Ravitch's vision of education in the future is well integrated and planned out, yet flexible enough to recognize differences among students; classic in tone and substance yet with practical components that maintain the link with the times. It is a unique service for citizens yet is well integrated into society. By any standard, it is an educational system that any society would be proud to claim.

Just as quickly as she moves from current realities to futuristic visions, Ravitch switches back to the present and the obstacles standing between our current system of education and the system of the future. In her mind, the obstacles are political in nature. The various interest groups in education are more likely than not to be embroiled in confrontation over policy issues ranging from teacher salaries to curriculum design. As a result, the atmosphere is increasingly antagonistic and hostile and change comes slowly if at all.

Ravitch concludes that much work is left to do if we are to survive economically, socially, and as a democracy in the future.

Her vision of the future is one way to survive. How we will overcome the obstacles that currently separate us from that vision is the missing link.

Three themes pertaining to education and the future permeate Ravitch's address: 1) education and economic growth/competitiveness; 2) education as part of a broad social policy agenda; and 3) education and democracy. These themes are critical; however, perhaps a greater fleshing out of the issues pertaining to them will be useful in understanding what the future holds for education and vice versa.

Education and Economic Growth/Competitiveness. By now it is well accepted that the educational attainment of a nation's citizens and the economic prosperity of that nation are directly proportional. As conceptualized by E.R. Carlisle (1988), this relationship is as follows:

Standard of Living (Affluence)
↑
Productivity (Efficiency, National Competitiveness)
↑
Technology (Research, Development)
↑
Education (Training, Work Skills)

The affluence of any nation is generally measured by per capita gross national product, which is the total output of a country divided by its population. For all intents and purposes, the productivity of a nation and its affluence are one in the same. Productivity is total output per hours worked and affluence is total output per capita. As productivity increases so does affluence and vice versa. The degree to which any nation is productive and competitive depends to a great extent on its efficiency in production.

In turn, efficiency is dependent on the development, use, and refinement of technologies. The source of this technological change is a highly trained, well-educated work force. In short, education is the catalyst for national, state and local economic development and strength. As stated by Carlisle, "National aspirations for a quality educational system and a strong technology base are increasingly viewed as inseparable."

Although this is a simplistic portrayal of a much more complex relationship, it conveys the direct link between education and economic growth and competitiveness. This link will become more evident as we move into the twenty-first century. A nation's ability to compete in the global marketplace will increasingly be measured by the ability of its work force to both adapt to and bring about technological change. And, the ability of any work force to adapt to change is almost exclusively moderated by its level of educational attainment.

Education as Part of a Broader Social Policy Agenda. It has become increasingly obvious that education is and can be an important catalyst for social change. The relationship between education and economic change is clear. The economic and social life of a nation have always been interrelated, and the boundaries between the two will become even more ambiguous as we move into the future. Therefore, it is evident that education has an important role to play in the social policy agenda for our nation in the future.

One concrete example of this link is the relationship between educational attainment and violent crime. Ravitch cites the growth in violent crime committed by young people in cities and suburbs as one of the problems facing urban areas. One does not have to go far to find examples of this. There have been dozens of empirical studies which have demonstrated the relationship between the level of educational attainment and propensity to commit crimes. Prisons are overflowing with illiterate inmates. Although education is one of many controlling factors at play here, it is not inconceivable that improving the quality of education received by urban youth would greatly help achieve the social goal of less violent crime in urban areas. Comparable arguments could be developed which pertain to other urban problems such as drug abuse and teenage pregnancies. Thus, we will need to continue to further integrate education into our social policy strategies.

Education and Democracy. The link between education and the preservation of the democratic ideals and civil liberties inherent to American society has been an implicit part of our value structure since the days of Thomas Jefferson. In a democracy, the educational system serves to transmit these ideals and liberties through the study of history and other subjects. To paraphrase Ravitch, the preservation of our democratic values and civil liberties hinges on understanding our culture and its institutions.

Unfortunately, our children's understanding of the historical and political foundations of America has been in decline for some time. Numerous studies have documented the lack of cultural knowledge among high school graduates. If the tenets underlying democracy are diluted, distorted, or worse, forgotten in the transmittal from one generation to another, what can we expect our country to be like in the future?

Thus, the educational system bears a powerful responsibility as we move into the twenty-first century. As educators we must ensure that the understanding of our heritage and democratic tenets are made an important part of the educational process. This is not to say that students should be subjected to memorization of dates and other useless trivia, as suggested in E. D. Hirsch's *Cultural Literacy*. Rather, they should understand the concepts of democracy and why they must be preserved.

The three themes discussed above provide educators with a framework for the future. However, the missing link in Ravitch's address (and in many theses on this subject), is how we attain the educational system we desire for the future. Rather than provide ideas or suggestions on how educators might overcome the obstacles facing them, she falls back on the shopworn complaint that the politics of education makes real change almost impossible.

It is more than likely that the many conflicts and power struggles that take place within the educational system have a deleterious effect on educational reform and change. It also seems that we would well do without the more trivial personality conflicts and struggles that inevitably arise in any educational setting. Unfortunately, these things are not going to go away. Conflict and struggles for power will be present within society and its many subdivisions for as long as people populate the earth. Instead of trying to wish these things away, educators and others concerned with the future of our nation's system of education would be better off understanding and mastering the process by which educational policy is formed.

Conceptually, the process by which educational policy is formed is similar to the means by which other kinds of social policy are formed. The external environment (e.g., demographic and economic forces) shapes societal demands and support for policies which in turn flow into the political system. These demands and support may flow from individuals, groups, or institutions "external" to the political system. (The term 'political system' refers to the constitutional and statutory branches of government.) In turn, the political system responds to the demands and support from society through decisions which culminate in policy. As a result of the policies, there is feedback from society which starts the policy process all over again. Thus, conceptually the educational policy process is continually adapting and responding to changes in the environment and society.

In reality, the educational policy process is not too far removed from this conceptual presentation. What educational policy has been developed that hasn't started out as a result of public demand or other external pressure? Although there are always exceptions, educational policy formation conforms more or less to this framework, whether at the federal, state, or local level.

In short, the task facing those who will lead education into the future toward the system we will need, will not be to rise above the politics of educational policy formation, but instead to become active participants in the process. They will need to master the intricacies and interrelationships of the policy process in order to articulate the educational system that will produce the kind of citizens needed in the future. This is a mammoth task to be sure. People spend their entire careers attempting to manipulate the policy process to no avail. However, it is only through the process that any change can occur.

Ravitch effectively articulates the many problems facing our educational system today as well as the kind of educational system we will need in the not too distant future. The three underlying themes of economic growth and competition, education as a part of a social policy agenda, and education and democracy provide an important blueprint for the future of education in this country. Her vision of the ideal school system provides educators with a laudable goal for the twenty-first century.

The challenge for those involved in education at all levels from the local school board to the federal government is twofold.

First, education leaders must come to consensus on what the future will bring, and must develop a coherent vision of our future educational system.

Secondly, and most importantly, all concerned with the future of the education enterprise should become active participants in the educational policy making process. Only a well-articulated educational policy agenda will move us toward our visionary goals for the future. If we fail to meet these challenges, the next century might well bring us the educational system we deserve instead the one that we need.—DTL

Sources

Diane Ravitch, Adjunct professor of history and education, Teachers College, Columbia University, New York, New York 10027. She is author of several books, including *The Schools We Deserve,* published in 1985 and *What Do Our 17 Year Olds Know?* with Chester E. Finn, Jr., published in 1987.

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PEOPLE ARE MORE IMPORTANT THAN THINGS

"What you give away, you will probably always have, and what you try to keep, you will lose. My guess is that one day we are going to have teachers who'll say, 'I'm going to give my life to this business of teaching kids and loving kids and I'll always have that.' "

So predicts James Kern. In a warm and witty account of stories and observations, he suggests that there are four things to remember as we move into the twenty-first century:

1) People are more important than things.

2) Kids are people, too. "Take time with the children now, for they're all we've got for the future. Children will not wait—they will continue to grow."

3) Be willing to change. "With the knowledge from the past and the possibilities of the future, imaginations can soar to levels yet to be perceived."

4) Remember the value of laughter.

Sources

James Kern. Former teacher, consultant and speaker, 100 Winston Place, Spring Branch, Texas 78070.

For more information about audio tapes of James Kern's inspiring messages, contact him at the address above.

EARLY DIVIDENDS FROM INVESTING IN THE FUTURE

In the lore of the personal computer, Alan Kay's name is legend. But the most interesting invention of the last thousand years was not the mouse or the modem, according to Kay. The most interesting invention was the printing press.

One of the things printing did for society, Kay contends, was to extend childhood. "Up until then, you were considered to be an adult, according to the Catholic Church, at age seven, when you had learned the last thing that you had to learn, which was to be competent at language."

But after the invention of printing, there were new areas of competency and the word 'child' went from being simply an indication of relationship to being a new stage of life. The large-scale changes in history have always been the result of changing the way we communicate."

Alan Kay believes in children, and he chides educators for not expecting enough of kids. "*They* can handle computers just fine. It's the educators who have problems with the new technology," he says.

In fact, technology isn't the issue at all, says Kay. "Kids are creative all by themselves," he insists. "If you put a kid in front of a computer, he or she will be creative with computers. If you put them in a sandbox, they will be creative with sand. It is the adults who aren't creative enough, and therefore block creativity in children. Don't put restraints on them. Let them use computers, or any other tools, and they will invent new ways of using them."

Kay is an Apple fellow, a scientist with free reign from Apple Computer Company to experiment with ways of using computers and incorporating them into society. Though his serious work in computer science puts him on a lofty plain with but a handful of other American and world computer scientists, Kay finds that what gives him the most pleasure now is working with children in a barrio school in East Los Angeles to develop a 'learning environment' for young grade school children that no one else would give a snowball's chance in a very hot place of being able to understand and use computers at all—or even the standard 'basic skills' of education.

Through video, he shows children in the barrio school playing with concepts on computers, addressing questions such as how animals propel themselves in the water. Soon the children have invented water animals combining the attributes of several different animals, like seahorses, flying fish, and barracuda. Tomorrow's marine biologists are being born in the classroom.

He cautions educators to watch out for the syndrome expressed by Edward De Bono, who said that 'the biggest problem with American business is that when it gets in trouble, it redoubles its efforts.'

"There is more than one dimension to any problem, and when we're experiencing problems, it's often not because we're not working hard enough. It's because we're on the wrong dimension. The biggest problem that we have to deal with is that we're a performance-dominated society, and we tend to measure performance quantitatively. But the way you actually get good at performing is not by practicing performing, but by practicing awareness, which is a qualitative thing.

"The way you get to be a good scientist is to develop some aesthetic feeling. New science has always come out of a new aesthetic feeling about things. And in order to get new education, we have to get away from worrying about beating the Japanese, which I think is one of the biggest red herrings we can bring on ourselves. It simply leads to more of the factory system, thinking of children as deficient adults that have to be 'fixed' by being educated.

"In schools," says Kay, "if we were able to turn to a more aesthetic way of appreciating what knowledge is, and what it does for us, and how we can get leverage from it, then I think we could find the values we have lost, and regain the world we want to find in the twenty-first century."

Although Alan Kay is involved with one of the greatest success stories in American business, Apple Computers, he does not consider himself to be a businessman, but a scientist and a researcher. Speaking on a panel at the Symposium on Education for the Twenty-First Century, he takes exception with fellow panel members from the business community who say education's needs would be best served by applying business methods and bottom-line orientations to education.

Responding to, among other remarks, a statement of concern that most of the patents in America over the last decade had been issued to 'foreigners,' Kay says: "First, I don't believe that the private sector, if that means American business, can do a good job at education at all, because I don't think that a strong goal-oriented approach, such as we see in most businesses that have their eyes on the bottom line, is going to work on education. I think that education is more like funding research. Children are the researchers; they are trying to find out about a world that they haven't known yet. American business has had a dismal record, and so has the federal government, at funding research in this country.

"One of the reasons that most patents have been issued to foreigners recently is that basic research, especially, has broken down since the 1960s in this country," Kay says. "Those of us who are scientists see an immense top-soil stripping operation going on in business and industry. Most of the computer science stuff that people are buying now was invented in the '60s, and guess what? Hardly anything was invented in the '70s, and almost nothing has been invented in the '80s."

The Japanese, he points out, eight years ago for the first time started moving significant funds into funding basic research in Japan, "because they said explicitly that the 50,000 patents bought from the Americans are now running out, and there aren't any new ones; in order to develop, they are going to have to do basic research themselves."

The reason that has happened, Kay thinks, is "something that the Frenchman De Toqueville said in *Democracy in America* in 1835: 'Americans are a people with no past and no future; they live in the short-range extended present,' which is about two years long. That statement is as true today as it was in 1835.

"As long as we have that attitude, to anthropologists we are acting like hunters and gatherers, expecting there to be an immense, everlasting frontier. And hunters and gatherers tend to kill the tribe that comes over their hill, competing for their turf.

"But our civilization came out of a completely different way of doing things," Kay points out, "and that is agriculture. Agriculturists may compete with each other in the market on Saturdays, but they help their neighbor raise his barn on Tuesday, and that is exactly what the Japanese are doing. They're not trying to kill each other off like American business is doing to itself. Unless we change, rotate our sensibilities, any type of goal-oriented way of approaching American education that the business-industrial community suggests is simply going to make our situation worse, not better."

But not all of Alan Kay's critical thinking is aimed at the business community. He has a fair amount left over for the media, and for board members themselves. Responding to a question of whether school board members ought to be elected, as opposed to appointed, Kay says, "I have no problem with the election of board members from the community, as long as they're competent to do the job.

"But competence can't be measured just in terms of having book-knowledge of educational practices, and things like that. There are a couple of elements that I think school board members ought to understand. One of those is that in the civilization in which we live, almost all the interesting things discovered since the dawn of the Renaissance, particularly in the areas of science and technology, are against common sense; things that are very large, very small, very fast. For instance, the term 'disease' is only about 120 years old. The reason is that it wasn't common-sensical to think of little animals that could actually do things to us. They were, after all, so small, and most people didn't even think they were really there. So, using common-sense reasoning as a way to resolve problems is probably a mistake. It would be good to elect people who know they have to go beyond common sense and simple analogies in order to solve complex problems.

"Another element that board members must make themselves aware of is to try to understand the differences between the kind of learning our nervous systems are set up to do from the environment, like seeing faces and learning language orally; and those things that are learned from inventions that we have made, and are not natural to us as a species. Sometimes what we have learned from our inventing is the result of a long train of thought, maybe even generations long, and if this kind of knowledge is lost, it might take thousands of years for the circumstances to create it again. Things like the Copernican theory of the solar system, for instance. If that were lost, the next generation wouldn't automatically wake up knowing that.

"So, it seems to me that the kinds of education that we're really interested in are those kinds of things where we actually have to build new structures that nature didn't put there in explicit fashion. I worry every time we try to sugar-coat the process of education by making schools more like television.

"Even making computers in school more like television really worries me, because television is the biggest culprit, of the many culprits we can single out, for stopping us from thinking critically, for the simple reason that we don't have to learn how to watch television. The very things we need to know in the close of the twentieth century are the things we need to build structures for. One of the things I would do, if I were a school board member, is to try to convince the parents not to let their children watch television. I would just do away with it.

"Besides not being good in and of itself, I believe it leads to a way of dealing with the world that is not conducive to building the complex structures that we have to build. As long as television is there, I think it's very, very difficult for people to muster the energy to actually do the kind of structure-building that they need."

The music is not in the piano

One of the things that school boards are anxious about is how to get there from here. What kinds of skills and thinking must we encourage in children? What kinds of things should we be incorporating into schools so as to keep pace with the future? Is there one "best thing" that would prepare today's children for the twenty-first century?

In response, to those questions, Kay offers a story about a group of parents in a California community who decided that their children would not be successful in life unless they all became musicians before they got out of high school. They took the idea to the school board.

"This started as a grass-roots movement in Southern California, with conversations begun in hot tubs, and gradually worked its way north to Sacramento just before a critical election. The legislators, as is their custom, worried about how this would affect their chances for re-election, and debated how to accomplish this mandate. Finally one of the legislators said to his constituents, 'We have a solution for you. We're going to put a piano in every classroom. That should take care of the problem. Unfortunately, the state doesn't have enough money to hire musicians for every classroom, so what we'll do is to give all the teachers a two-week refresher course just before the end of summer.'

"Imagine a group of fifth grade teachers meeting together, wondering what they're going to do in the fall. One of them says to her fellows, 'We've heard of this thing called the C-Major scale, and I'm sure we could teach that to the class; some of the kids would be better at it and some would be worse, so we can measure that, and we'll get a nice, bell-curve distribution, and we can give grades, and that's what we'll do in the fall.' So with this bit of reassurance, the teachers stopped worrying.

"Now, we all know the problem with that, and as every musician will tell you, the music is not in the piano; otherwise we'd have to let it vote. And you know what happens when any group of teachers is confronted with a situation like this; they immediately start coming up with behavioral objectives. Well, behavioral objectives are just that; a desire to get children to exhibit a certain behavior; it has almost nothing to do with the content of what was originally intended.

"Well, as you've probably guessed, this scenario isn't really happening with music; but it is happening right now with computers. We have this urge to put computers in classrooms; there's this—what you might call myth—of the industrial revolution that technology can fix any problems that we have, just as we believe that education will 'fix' our children, take away any deficiencies they may have, and make them worthwhile members of society. The problem is that the computer isn't going to do that for us.

"We have to have some sense of what the technology is; what it's for. Often we do this by forming a metaphor," says Kay. "For instance, will one piano in the classroom work with 30 children? It's not clear. How about one computer? That depends on whether the computer is at all important. If it's as central as pencil and paper, then what you're doing is setting up a situation similar to having one or two pencils in the classroom, where kids have to share them. Or, even worse, if you have a computer classroom, then what you're doing is putting all your pencils in one room, and the children get to use the pencils one or two hours per week. Neither of those metaphors works, if the computer is used like pencil and paper."

Inventing the future

"How can we predict the future?" asks Kay. "One way, the way I used to tell Xerox, is simply to go out there and invent it; that way you don't have to worry about what other companies are doing, you just go out there and do what you want to do. Many of the big ideas of the twentieth century have been done by people who thought that way.

"Another way of looking at the future is that any idea that is going to affect you in a large way takes at least 10 years, and often 20 years, to make its way out of the lab and into commercial viability. That means that anything that is going to affect you in some way, for the rest of the twentieth century, is already sitting in somebody's lab, somewhere."

For instance says Kay, the first thing that ever looked like and operated like a Macintosh computer was created in 1972. It had windows; it had a much larger and higher resolution screen than the Macintosh; it had a network, it had a page-per-second Xerox printer, as opposed to the eight-pages-per-minute printers of today; and the printers were higher resolution.

"So, this was not a technology that was going to be made better. It came full-fledged the way it was going to be, and what has been happening is that the technology has gone through many implementations in order to commercialize it. The first thing that came out for public consumption that looked like what we did in 1972, came out in 1982, followed by the Apple LISA in 1983. The first affordable thing that looked like what we did was the Macintosh that came out in 1984, twelve years after the original implementation. The people who first came to XEROX-PARC in 1972 were seeing what the future was going to be like twelve years later."

Kay shows several videos of innovations in technology that are "still in the pipelines" of commercialization. Amazingly, several of the technologies he shows that have yet to be fully commercialized are already 20 years old, or more.

One video shows Doug Englebart, another of the small fraternity of true pioneers in the computer field, presenting an already-operating interactive computer system, including video-hone connection and text/graphic manipulation device, first used in 1968. Both Englebart, in San Francisco, and his colleague in Menlo Park are able to talk, view each other, and manipulate text and graphics on the same screen, using ordinary phone lines as the connecting medium between them.

"This is becoming available now in Europe, but won't be available here for perhaps five years," says Kay, "and yet when I showed it last year to Western Bell, which was quite excited about the technology, they had no idea that AT&T had turned down the idea as impractical . . . more than 20 years ago."

It was Englebart and Kay who were among the first to conceive of the possibility of "personal" computers that would allow anyone to communicate using telephone lines. And, although he sometimes dismisses the title 'Father of the Personal Computer,' Kay is, if not its father, certainly the agent-provocateur for its emergence into the marketplace through his efforts (with many others, he points out) at Xerox's Palo Alto Research Center, where many of the personal computer metaphors were first worked out.

"You might not guess," he says, "that Englebart also invented the mouse, the device we use to move the cursor around our computer screens, in 1968."

Another video, also from 1968, shows a system designed for RAND Corporation economists, "who didn't want to become computer programmers, and, in fact, didn't even want to use keyboards." So, using a special computer 'language' called GRAIL (for GRAphical Input Language), the computer is operated by using a sort of pencil (light pen), that allows the economists to 'write' on the 'tablet' (screen). The computer recognizes their handwriting and put characters or numbers on the screen. "This is where windows came from, literally."

"I had a chance to use this system, for half-an-hour, in 1968," he says, "and it completely changed my way of thinking about computers. Here we have a system where I felt like I was actually sinking my fingers right through the display, and actually touching the structures underneath. You might call this type of computing 'intimate' computing. All other systems I had ever used felt like I was doing an experiment in radio-active chemistry, where there was something really dangerous, and I was separated from it by three feet of lead, and could only touch the system with those little robot-arms, gingerly and at a distance, hoping nothing would go wrong.

"Thus, in 1968," says Kay, "the three major paradigms of computing all existed side by side; institutional computing, as in IBM mainframes; personal computing, or desk-top computing, as in the Englebart system; and intimate computing, the system of the '90s, in the system at RAND.

"But personal computing isn't here yet. If it were, we couldn't bear to be without them. In California, we'll weave them (personal computers) into our tee-shirts. Computers will become more and more like materials, and less and less like 'artifacts.' There is no personal computer today in which you'd be willing to do really mundane things. In some funny sense, it's mundanity that changes a technology from being an 'interesting, remarkable' thing to something that is simply a part of the fabric of our lives, like telephones and copying machines and calculators have become."

Another concept that changes as technology moves into culture, says Kay, is that of literacy, specifically computer literacy. "Comparing this new literacy with print literacy, one of the most important things about print literacy is to go beyond merely reading, to writing. We don't think that a person who can merely read is literate; all a person who can only read can do is access work done by other people. A person becomes truly a part of the literati when he can write, as well. Writing is even more important than reading," he concludes.

"Now, on a computer, access to somebody else's work comes through a user-interface. Macintosh is an example of a successful user interface, through which it is possible to gain access to a wide variety of tools. On the Mac, there's a common user interface that is easy to learn, and learning it on one application teaches you about 80 percent of what the next application is going to demand from you."

What does it mean to have 'really good access?' Kay answers that question with a video of a home movie taken by friends of their 22-month-old daughter, "who has never lived in a world not densely populated by Macintoshes," since both of her parents work at home, and each uses a Macintosh computer.

"When I found out the little girl was interested in computers, I gave her an Apple II, which she promptly rejected," says Kay. "She wanted a Mac, just like her folks. To this little girl, the Mac is not technology; technology is all that 'stuff' that wasn't around when you were born . . . I have to warn you," Kay smiles, "that this little girl is actually an experienced user of the Macintosh; she's been using it for about six months."

"After seeing this video," Kay continues, "we ran many hours of tests with her in the laboratory, just to see what she could do. What we discovered is that she is about 70 percent literate in the Macintosh user interface. That meant that she could take any application, including a really complicated one like Pagemaker, a desk-top publishing application, start it up, make marks in it, print the marks, save her work, and exit the programs. Thus, this little girl could work at a level of literacy, using the Macintosh that she hadn't yet mastered using language. The cost of the Macintosh I gave her," he jokes, "was the best money we ever spent on advertising." Kay was so moved by the little girl that he has vowed never to develop a computer that a two-year old couldn't use.

"Knowing how to use the tools is one kind of literacy," Kay says, "but knowing how to make your own tools is another and higher form of literacy, like writing is a higher form of literacy than reading."

And what is still to come? Kay shows a video of a computer system, a network, actually, that Apple has developed for use at the 1992 Winter Olympics. It is full of bells and whistles, designed to give casual users information on events, pictures of places where the events are taking place, scores of the contests, names of restaurants and hotels; anything you would want to know. This is the computer that, like the RAND computer system of the '60s, is the "intimate computer" for the '90s. The person introducing the computer is John Sculley, chairman of Apple Computer.

At first, the audience isn't sure when the computer, itself, will be introduced into the picture. Sculley is having trouble with a technician, who seems not to understand his question on what to show. Then, slowly, it dawns upon the audience that Sculley isn't talking with a technician. He is talking with the computer. There is no keyboard, there is only a verbal interface. The voice saying, "Would you repeat your question, Mr. Sculley," is the computer, trying to hone in on something it can use to identify his request. HAL from the movie *2001 Space Odyssey* (also a product of 1968) has come home, nine years early.

* * *

After his speech, board members gather around Alan Kay to ask questions. Someone asks what a school district can do to get computers into its schools when there isn't much money to play with.

"Actually," replies Kay, "having computers isn't so much the idea as having ways of getting and using information. A copy machine and lots of blank paper are more valuable to your youngsters than any particular computer will ever be, so long as you have a good library you can use. I'd even say that having students make their own textbooks, using just magazines, books, drawings that they collect and put together, and the copy machine to make enough copies for everyone, would be more useful than spending the money on computers," he says.

The man who asked the question thanks him, and backs away. It is easy to see that he is disappointed.—JLE

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TOWARD A LESS INTERESTING MILLENNIUM

Renowned futurist John Naisbitt burst on the national scene seven years ago with a prescient best-seller, *Megatrends*. It predicted the broad economic and social trends of the 1980s, proclaiming our transformation from an industrial to an information age, from low-tech to high-tech, from hierarchies to networking, and from centralization to decentralization.

In a sense Naisbitt invented futurism as it is currently practiced; and in so doing, he became an acknowledged prophet of things to come. With a research organization to back up his predictions, Naisbitt has become an advisor to large corporations and heads of state.

Naisbitt offers predictions, not for the coming century, but for the last decade of this century. As always, Naisbitt is intriguing; although some might want to take issue with some of his specific predictions.

Demographer Harold Hodgkinson warns about futurism in general, arguing that demographics (the study of populations and their changes) is a better basis for looking ahead.

The beauty of demographics, says Hodgkinson, is its precision. It is based on certain facts:

1) If you weren't born, you don't count.
2) Some people have more kids than other people.
3) Some people live longer than other people.
4) Some people move more often than other people.

"There is a precision to this system," says Hodgkinson. "Every decade, people get exactly ten years older." Therefore, he argues, looking at the present is the best way to foretell the future.

He urges that people "hold futurists to account by going back ten years later and saying 'Hey . . .' "

And that's the beauty of predictions, if they're time-specific: they either will or they won't happen. So, tune in around the year 2000 and check up on Mr. Naisbitt.

Here's what he says will happen:

1) The big story of the 1990's will not be high tech, but a renaissance in arts, literature, and spirituality.

This will be a tough one to check up on. What constitutes a renaissance? Can it be confirmed by opinion polls or demographics? Did 15th century Europeans know there had been one? You see the point. It might take more than one lifetime to recognize a renaissance.

Naisbitt is probably right when he says the accelerating pace and complexity of modern life is tipping us off balance. And he may be right that we'll seek to regain our balance and a deeper sense of meaning by reexamining our humanity.

2) The coming decade will witness the end of the welfare state and the death of socialism. "In all industrialized countries this is happening. It will continue for the rest of the century," Naisbitt says.

He sees the worldwide privatization trend as an important clue to the trend: "More than 80 countries are engaged in it. Britain is the leader. Over half of Britain's workforce has been shifted from public to private employment. More Britons now own stock than belong to unions," Naisbitt says.

In the U.S. he sees our postal service becoming privatized. In Red China, Guangdong province exports more goods than Singapore, he says. In the Soviet Union there is extraordinary change: "You may wonder how they rationalize capitalism when the state owns the means of production. The answer is they have discovered leases! They now lease farms and factories for 50 to 90 years. In the USSR a year ago there were 60,000 private enterprises. There are now over one million," Naisbitt says.

To check up on this one, we'll first need to define what we mean by socialism. One arena to watch is that of health care. The idea of a nationalized health care plan emerges and re-emerges.

3) "English is emerging as the worldwide language—there are more than a billion English speakers now in the world. Two-thirds of all scientific papers are published initially in English. More than one-fourth of all Chinese are studying English. We have to think of English as a strategic resource," Naisbitt says.

This may be an accurate prediction—but one question to ask is, is it a desirable development? English is now the primary business language of the world, but Japanese and Spanish are good bets for secondary status. Educated business people worldwide are increasingly multi-lingual—a tremendous advantage that few Americans share.

4) "Another trend on the horizon is the emergence of the Age of Biology." "All biological systems are information-feedback systems. Physics was the communications model before. Now we are increasingly using the language of biology," according to Naisbitt. Scientists are working on genetic engineering, which will have a major impact on food production. Farmers will spend money less on chemicals and more on genetically engineered seeds, which will carry their own frost and drought resistance. The scary part of this trend is its potential application to humans: "The ethics of bio-technology will be among the great debates of the 1990's. To paraphrase Darwin, the debate will center on 'unnatural selection.' "

5) We'll see a shift from the dominance of the Atlantic culture to the dominance of a Pacific culture. "There is immense diversity there. The people speak over 1,000 languages, and have the richest religious diversity. The Atlantic is the ocean of the present, the Pacific is the ocean of the future."

This prediction does not come as a great surprise to *Newsweek* readers. A February 22, 1988 20-page special report, proclaimed "The Pacific Century" ahead. Others predicted the coming Pacific age ten years ago, or more.

6) "The decline of cities and the growth of the electronic heartland." The industrial revolution created larger and larger cities. Workers lived their whole lives within walking distance of their workplace. But now electronic innovations allow an unbroken link between work and home, permitting people to move to more liveable rural areas. Just ahead is a spreading and thinning of the population everywhere. Quality of life concerns will fuel this dispersion. "Five years ago I moved to Telluride, Colorado. My house is at 9,000 feet on a mountain that rises to 13,000 feet in a box canyon, and yet I am just as in touch with the outside world as if I lived in a city. This is being duplicated in hundreds of places all over the world," Naisbitt says. "If cities did not exist it would not be necessary to invent them."

Clearly, Naisbitt is right in saying that technology makes it possible for people to work from their homes, and therefore live where they please. Yet, the *Christian Science Monitor* reports (August 25, 1989) that "In contrast ot the back-to-the-country movement of the '70s, the U.S. Census Bureau's population estimates so far in the '80s show metropolitan counties growing at almost twice the rate of their rural counterparts. An estimated three-fourths of all Americans now live in urban areas."

The newspaper quotes George Sternlieb, an urban expert at Rutgers University: "The small towns of the Midwest are emptying out—it's a continued decline of the true rural population."

7) **We'll see worldwide free trade.** There is a counter-trend of protectionism. But we are really moving to a unitary global economy, he said.

Prominent futurist Alvin Toffler disagrees. He argues, based on emerging economies of scale, that "while some mass markets may continue to expand temporarily, we're getting away from homogeneity and mass production and towards customized local and regional production . . . Therefore, in the long run, regionalization will be a more powerful trend than globalization."

8) **The global economic boom of the 1990s will mean that the world is entering a period of accelerating competition.** "Interest rates will be contained because there is plenty of capital in the world today," Naisbitt states.

"There is no limit to growth. All things that come out of the ground [raw materials and agricultural products] are in permanent oversupply. Taxes are coming down everywhere. Taxes on individual income are being reduced. We are beginning to attend to our global environment."

This is a pretty broad statement, and seems to be based more on hope than anything that is actually happening. Scientists studying the greenhouse effect and its relationship to skin cancer; environmentalists striving valiantly to clean up the results of Exxon's oil spill on the Alaskan coastline; and the disappointed beach-goers who watched medical wastes wash up on the eastern coastline might take issue with his assertion that we are beginning to attend to our global environment.

Educators might wonder, as well, whether a predicted drop in taxation is a laudable development. Wouldn't America's hopes in world economic competition be better served in the long run by paying sufficient taxes to support good schools?

9) **"The era of globalization has begun.** There have been no wars among the 44 wealthiest nations since 1945. The Cold War is clearly over. The post-war era is clearly over," Naisbitt claims.

10) **Our human resources are our competitive edge.** In that regard, no country in the world is better positioned for the future than the U.S.: "We in the U.S. have the richest mix of racial, ethnic and global experience, which yields creativity. The U.S. has produced 160 Nobel Prize winners, Japan has produced four. That is not an accident," Naisbitt says.

Naisbitt's conclusions:

"A millennium is a powerful thing. The last time, in the 1890s, as we moved towards a millennium people went a little nuts . . . Priests thought it would signal the end of the world. So the year 2000 will exaggerate everything we are doing. The 1990s will be the most exciting decade of our lives."

No doubt Naisbitt is right, but the Chinese have a curse that goes like this: "May you live in interesting times." We might do better to hope that the "most exciting decade" ahead is less interesting, and more humane and livable, than the one now drawing to a close.—GA

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CURRENT ISSUES

"Tom appeared on the sidewalk with a bucket of whitewash and a long-handled brush. He surveyed the fence, and all gladness left him and a deep melancholy settled down upon his spirit. Thirty yards of board fence nine feet high. Life seemed hollow and existence but a burden."

—Mark Twain

ILLINOIS' FUTURE IS HERE TODAY

If you want to predict the future, look at the present.

That's the message from demographer Harold Hodgkinson. "The beauty of demographics is that you're simply saying that people will grow up, and by doing that, they make prophecies come real," says Hodgkinson. "If we look at Illinois today, we can probably find out most of what we need to know about tomorrow."

For example, he points out, in Illinois, 17,000 people work as computer programmers and 222,000 as fast-food workers. "Every time you crate a new job for a computer programmer in Illinois, you create nine jobs for cashiers." There are 68,700 engineers in Illinois, 22,800 doctors, 28,800 lawyers, and 149,200 janitors. Between 1980 and 1986, Hodgkinson's figures show, manufacturing jobs decreased by 23.4 percent in Illinois, compared with a national average decline of 6.4 percent. Service jobs increased by nearly 20 percent, compared with a national average increase of nearly 30 percent.

"As school board members, we love to debate the issue of the future computer programmer in terms of his or her education, but you need to think about cashiers, too."

Another issue brought to light by demographics is what Hodgkinson calls "a seismic change" in the American family. The Norman Rockwell family of a mother, father, and two children once represented 60 percent of the households in the nation. Now, that image represents six percent of families. Reasons include mothers who work, single parents raising children alone, and people who live alone.

That has many implications. One is that most of the children who are less than four years old now will live at some time with only one parent, in more than 90 percent of those cases, the mother. The average household income for two-parent children in 1988 was $33,000; the average for single-parent children was $11,000. That means a lot of people are and will be living in poverty, including 23 percent of all children under the age of five. And research has shown that poverty is a major factor in determining whether children succeed in school.

Many people will have only one child—and "only" children are different from those who have siblings—and others won't have children at all. In the meantime, the elderly population is growing. "Older people vote more often than younger people," he notes; and they're most interested in programs that benefit themselves. He mentions a city in Florida where all the street lights have been retimed so that people walking across the streets have four times as long as they used to, and those driving cars have one-fourth of the time. "You can guess who made this happen."

The population will become increasingly diverse, Hodgkinson says. By the year 2020, our population will be 52 percent white, 20 percent black, 23 percent hispanic, six percent Asian, and four percent other. That, he observes, raises the interesting question: What do you call minorities when they're more than half?

But the numbers also raise more serious questions, such as "can we be a nation if only 52 percent of the kids come from the core culture?"

It's an especially serious question given that most non-white groups have received short shrift in the United States. He offers an example of how demographics can be used to short-circuit the cycle that results in statistics such as the fact that in the United States in 1986, only four doctorates in mathematics were awarded to black students.

"The big insight that demographics makes reasonable is the educational pipeline," Hodgkinson says. The educational pipeline is the movement of young people from kindergarten all the way though graduate school.

For example: Of four million high school sophomores in 1977, only 9,700 will earn doctorates in science and engineering in 1992. We know that third graders love science, maintains Hodgkinson, but by seventh and eighth grade, interest has dropped considerably. So, if we want 18,000 doctorates instead of 9,700, we can "go back through the pipeline and find places where for small investments of cash, we can make an enormous difference," by nurturing the interest of third graders.

We can also foresee social trends, Hodgkinson says. A survey showed that 34 percent of college undergraduates said being a millionaire by age 35 was an important personal goal. "Anybody who thinks we're just around the corner from a major revival of liberal values needs to look at today's college students," says Hodgkinson.

Demographic figures also demonstrate that educating kids is a good investment from a financial standpoint.

The state of Florida leads the country in the rate of high school dropouts (Illinois is 21st). It also leads the country in prisoners per 100,000 population (Illinois is 30th). Minnesota leads in high school graduation rates, and ranks 50th in terms of prisoners per 100,000 population.

Some 80 percent of prisoners in American jails are high school dropouts, Hodgkinson notes. It costs taxpayers an average of $24,000 to maintain a prisoner for one year—and it costs about $3,400 to keep a child in Head Start for one year.

What's more, Hodgkinson says, prisoners are not a good investment. A recent study shows that 63 percent of inmates released from state prisons are re-arrested in three years—at a continuing cost of $24,000 a year to taxpayers.

"Think of the schools you could run in Illinois with $24,000 per child. Think of the kinds of universities and colleges and schools we could have with that money. Are we going to get it? No."

Each state, Hodgkinson suggests, needs to make some key strategic decisions based on demographics. "Do we have a whole bunch of poverty kids in our state who are coming to school at risk and who we know are likely to fail? If so, could we intervene in that part of the cycle and get a better return on our investment?"

The Chicago metropolitan area, with nine million of the state's eleven million people, presents some special problems, Hodgkinson observes. Two-thirds of Chicago's income goes to the suburban area, a higher percentage than in either New York or Los Angeles.

Only nine percent of the black population of the area lives in the Chicago suburbs, he says, the lowest percentage of the 30 largest metropolitan areas in the country. "Generally 30 percent of blacks now live in suburbs, having made enough money to be middle-class. In Chicago, this does not happen. Why?"

Hodgkinson's information raises many such questions, and they suggest many dilemmas for educators looking to the future. He suggests that the answers, as well as the questions, are inherent in the data, and outlines a "demographic agenda."

That agenda is: "to improve the bottom third, to reduce youth poverty, to prepare at-risk kids for school, to get more kids finishing high school and college at high levels, to increase the talent pool, and to look out for multiply-at-risk kids.

"In the next decade, we have to look very carefully at how we can make sure our bottom third gets to be as good as Japan's bottom third—because, frankly, our top tenth is better than theirs," says Hodgkinson.—JCB

ILLINOIS

By HAROLD L. HODGKINSON

1. Illinois is a very large state which combines aspects of the Great Lakes (manufacturing, big cities, ethnic diversity) with those of the Great Plains (major farming base, small towns, low diversity). The second largest metro area is now St. Louis, which is moving eastward, while the Chicago metro actually combines Gary and Kenosha.
2. Even with the very large and successful farming operations in the southern part of the state, it is Chicago and its 9 million people buying $75 billion in goods and services each year that dominates the state's economy. While the state suffered a very large decline in manufacturing jobs, Chicago's strong showing in finance has helped the state ride out the 1982 recession in reasonably good shape. A major problem is the rapid increase in low-paying service sector jobs throughout the state.
3. One quarter of all babies born in the state are born out of wedlock. As is usually the case, a high rate of infant mortality and handicapped kids are accompanying factors.
4. In Chicago, a major problem is the number of jobs that are moving to the suburbs, given the fact that minorities in Chicago have a strikingly low rate of access to sub-

urban housing. With white enrollment in Chicago city schools at 14 percent, and good jobs in the suburbs, landlocked minorities in Chicago have no clear path to better themselves, particularly because of the low level of college preparation in many Chicago high schools. The city could become a place where most residents will be rich or poor, with the middle classes all in the suburbs.

5. Because of its greater diversification, Illinois' economy has some built-in advantages over those of other Great Lakes states like Ohio and Michigan. However, Illinois is behind both states in the generation of new jobs, particularly those in the middle income area. This could become a severe problem in the next decade.
6. Given the fact that jobs and wealth have moved to the suburbs, the current "Chicago Reform" totally ignores the facts. To provide funding increases for a reform movement only after it has demonstrated success seems political in the worst sense. If the Governor and Legislature could stop playing games, the essence of the reforms—to bring schools back to neighborhood control and autonomy—could have some significant effects.
7. For those who do graduate from high school, Illinois has a remarkably diverse system of higher education waiting. Although funding has been inconsistent in recent years, the system still works well, even though it seems to ignore the City of Chicago.
8. Currently Illinois has a very stable population with few people moving in or out. (Of those moving in, a very large percentage are Hispanic, with Asian increases already underway.) Its economy is stabilized but not developing much, except in suburban growth corridors where very few minorities live. There is a need to get the state moving ahead, both in the areas of economic development and equity.

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SKIMMING OFF THE CREAM: MOBILITY AS A SEEDBED FOR SEGREGATION

"A lot has changed in the past thirty years. We have gone a long way toward achieving desegregation of middle class blacks and whites," says Raymond Mack. "But in the process we have skimmed the middle-class off the top of the black community, leaving behind an underclass which appears to be segregated by race, but is actually in worse shape than that because they are effectively excluded from the social structure."

Raymond Mack focuses on the evolution and the current status of the social/class structure of urban America. Specifically, he speaks to the problems facing urban blacks with regard to upward social mobility.

As Mack sees it, the problem facing urban areas is in some sense paradoxical. As society strives through legislation and social change to bring equality to blacks and other minority groups, there remain at the bottom of the social ladder those individuals who cannot move upward regardless of what changes take place. This group is popularly categorized as the permanent underclass.

The paradox lies in the fact that certain urban blacks are able to pull themselves into the middle and upper classes of society while other blacks remain a part of the permanent underclass. Thus, for these individuals, the adage, "some of us are more equal than others" has become a painful truism.

Raymond Mack's phrase, "skimming off the cream," is an interesting description of this problem. As Mack notes, this is a case where a rural metaphor has been applied to an urban problem. This is appropriate given that the roots of this problem began in the rural South. Prior to the Civil War, the black population in the United States was almost exclusively concentrated in the Southern states. Following the Civil War, the South was in the process of rebuilding itself while the cities of the North were riding the crest of the American industrial revolution. These economic factors—combined with the other, more obvious, cultural problems—served as an inducement to many blacks to migrate to cities in the North to find employment.

According to labor economists Ronald Ehrenberg and Robert S. Smith (1984), the movement of blacks out of the rural South to the urban North began en masse during World War I when wartime production created thousands of jobs in Northern industrial cities. This migration continued essentially unchecked into the 1960s, with millions of blacks leaving the rural South. This is an example of time-tested axiom of economics which holds that people tend to move where the jobs are.

The recession and the high inflation of the 1970s marked the beginning of the end for the smokestack industries in the Northern cities. The decline in manufacturing was coupled with increased use of automation in these industries which led to high unemployment in the North. The concomitant migration of people to states in the Western and (ironically) Southern United States left behind a decaying, homogenous economic base in Northern cities such as Cleveland, Pittsburgh, and Milwaukee. Structural unemployment, that which occurs when there is a mismatch between the skills demanded and those supplied in a given area, was rampant in these cities. This was especially true for urban areas where a high percentage of the population worked at unskilled or semi-skilled manufacturing jobs. Mack notes that a large percentage of black men worked at these types of jobs, so that the urban black population was affected severely by this downturn.

The 1980s have brought new life to many of the previously depressed Northern urban areas. Economic development, revitalization of downtown areas, and economic diversification into high technology, finance, and service industries have revived these cities. However, many scars remain. Urban blacks who were unable or unwilling to move to where the jobs were during the economic downturn of the 1970s remain unemployed or underemployed because they lack requisite skills and training. There also appears to have been a spillover effect taking place between generations of urban blacks. According to Mack, 19 percent of black men aged 20-29 reported no earnings in 1985 compared with 9 percent in 1973. Thus for many urban black families, poverty has moved from transitional to cultural status over time. As poverty becomes more and more embedded within the urban black culture, upward social mobility for these individuals becomes less and less of a possibility.

It is this "culture of poverty" that is at the heart of Mack's discussion. For all intents and purposes, the culture of poverty and the permanent urban underclass are one and the same. In his discussion, Mack outlines five attributes that characterize the culture of poverty: (1) increasing urbanization; (2) spatial concentration; (3) joblessness; (4) absence of earnings; and (5) lack of education. Three of these attributes—urbanization, joblessness, and absence of earnings—have already been discussed. These indicators hinge on the remaining two attributes—spatial concentration and lack of education, especially lack of education.

History has illustrated that the spatial concentration of any group of individuals is the first step in the systematic segregation of that group from society. In some instances, such as with the many Chinatowns and Little Italys scattered throughout the United States, this concentration has been to some extent voluntary. In other instances, such as was the case of the Jewish ghettoes of Europe or as is currently the case of the black homelands in South Africa, the concentration has been completely involuntary. In all instances however, the end result has been the same: segregation of the minority groups from the mainstream of life in the community.

As with these other minority groups, such has been the case with poor urban blacks. Mack notes that in 1959, 38 percent of poor blacks lived in central cities. By 1985, this figure had risen to 61 percent. The reasons for this increase are found in the demographic and economic factors previously discussed. The heavy migration of blacks out of the rural South into Northern cities throughout the 20th century, combined with the effects of the economic downturn of the 1970s on urban blacks, account for much of the rural to urban shift among poor blacks during this period.

How then does the concentration of poor blacks in urban areas perpetuate the culture of poverty? Primarily, the clustering of the very poor allows the obstacles to social mobility for urban blacks to feed upon themselves. If one views social culture as the primary vehicle for the transmittal of values and societal norms from one generation to the next, what kind of values and norms are being transmitted within the culture of the poor urban black? When unemployment and illiteracy are the norm within one's immediate world, these can only become more institutionalized as time goes on. As these norms become more institutionalized, the segregation of poor urban blacks does as well.

Thus we come to what is perhaps the most significant factor in the perpetuation of the culture of poverty among urban blacks: the lack of education. Data published in *Our Future at Risk: A Report of the Illinois Joint Committee on Minority Student Achievement* (1988) clearly illustrates this problem. In Illinois, 15 out of every 100 white ninth-graders in 1983 did not graduate in 1987. However, 43 of every 100 black ninth-graders in 1983 did not graduate from high school in 1987. For those blacks that do make it through high school, there are problems as well. In terms of ACT performance, in 1987 white students in Illinois had an average ACT score of 20 out of a possible total score of 36 while black students averaged 13.5. In short (at least for Illinois) young blacks are about three times as likely to drop out of high school as young whites. And if one views the ACT as an accurate measure of what students know upon completion of high school, those that do finish have achieved significantly less learning than their white peers.

Labor economists have long argued that additional education tends to cause significant increases in wage earning power over time. The empirical evidence as well as our everyday experiences support this argument. A college degree is worth more than a high school diploma in the job market and so on. This argument seems to extend to unemployment as well. Recently, Howe (1988) found that 58 percent of the rise in the unemployment rate in the U.S. over the past two decades was attributable to the high school cohort, while only 11 percent was attributable to college graduates. Thus, it would seem that additional education tends to reduce the probability of being unemployed.

Given this, it becomes apparent that the lack of education among poor urban blacks is the linch-pin to their culture of poverty. If urban blacks are more likely to be high school dropouts and consequently more likely to be unemployed than the general population, what is the chance that they will move out of the urban slums and upward in the socio-economic ranks?

However, as Mack notes, not all urban blacks exist within this culture of poverty. The strides made by blacks in the area of civil rights over the past two decades have allowed many blacks to finish high school, go on to college and move upward in society. The black middle-class is becoming more of a societal norm with each passing year—a positive statement on American society. Yet as the black middle class becomes more commonplace, we are perhaps letting ourselves lose sight of the growing number of problems faced by poor urban blacks. Not only are poor blacks physically segregated from other urban areas but they are increasingly segregated in our minds. The positive strides of the past two decades for some urban blacks make it easy to overlook those that remain behind.

In short, we have come full circle to the paradox discussed at the beginning of this essay: the fact that some urban blacks are able to pull themselves upward in the social structure while others are permanently left behind. Unfortunately, as with most complex problems, there are no simple answers to this paradox. Outlining the elements of this problem is one step in the right direction. We should not lose sight that this is but the first of many steps in the process, however.

Mack adequately describes the elements of the problems facing poor urban blacks. However, he makes it clear either explicitly or implicitly that the social strides made by middle-class blacks have allowed whites to ignore the plight of the black urban underclass and will for some time to come unless mainstream society realizes the ramifications for our nation. This is evidenced in his closing statement: " . . we shall begin to attend to the underclass when it becomes clear to the middle class that dependents cost."

This prophecy may come true sooner than any of us expect. As we move into the next century and into the competitiveness of a global economy, it will become clear to many that the problems facing the black urban underclass are the nation's problems as well. As noted by E. R. Carlisle:

> . . . the extent to which people are unemployed or no longer in the workforce

> because they have become discouraged and are no longer seeking employment, or on welfare, will cause the national standard of living to fall. Hence, the law of simple averages suggests that it is the common interest of all of us that the greatest fraction of the population be gainfully employed. (1988, p. 134)

In short, if the culture of poverty among certain segments of the black urban population is allowed to perpetuate itself unchecked, there will be long-term economic and social consequences for all of us.—DTL

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DOLLARS AND DECISIONS

"Once to every man and nation comes the moment to decide, In the strife of Truth with Falsehood, for the good or evil side."

So said poet James Russell Lowell. And it's true that it's sometimes hard enough to choose between good and evil. Some may identify with the immortal words of Huckleberry Finn, who observed that, "I was atrembling because I'd got to decide forever betwixt two things, and I knowed it. I studied for a minute, sort of holding my breath, and then says to myself, 'All right, then, I'll go to hell.' "

But, hard as it can be, deciding between good and evil is a snap compared to the decisions involved in school spending, which are more often than not decisions between a number of alternatives, each good in itself.

And therein lies one of the reasons schools have a problem with money. The problem isn't as simple as "not enough," although that's certainly part of it. But the base of the problem becomes clear when we consider what would be "enough."

"Simply spending more money guarantees only one thing: higher tax rates. It does not guarantee that kids will learn more or that schools will be better," says Richard A. Rossmiller, a University of Wisconsin professor and researcher.

Rossmiller bases his comments on a decade of studies, conducted by himself and others, that attempt to establish the relationship between dollars spent and quality of education. His conclusion: "The relationship between dollars spent per pupil and test scores is basically nonexistent. There is no relationship."

That's not to say that money isn't important. The school reform movements of the 1980s "at least in terms of dollars are mostly smoke, fog and mirrors," says Rossmiller. "There are very few additional dollars, particularly if you correct for inflation, going into elementary and secondary schools today. Yet if you look at the publicity that has accompanied the reform movement, you'd think that we were doubling our expenditures for education.

"The excellence movement has really been one of urging people, exhorting people to do more with what they have and get more results."

People who are serious about improving schools—as opposed to those seeking political solutions—agree that money doesn't guarantee schools will be successful. They also agree that lack of money nearly guarantees that schools will be unsuccessful.

Aside from "more," however, they don't agree on how much money would be enough. It's easy to throw out numbers: Two and a half times what we spend now on education. Ten times as much. As much as we spend on defense. But none of the numbers has much meaning, because we haven't really answered the question, "enough for what." That question isn't often asked, and is even less often answered, because to answer it would mean to decide what schools will do. And that implies deciding what they will not do—which more often than not means deciding they won't do something that would be good to do.

Those decisions do get made, of course; they get made in a haphazard, piecemeal style by legislatures, by proponents of this program and that, by influence peddlers and vendors, by people protecting their turf, and by dedicated educators who care enough to fight hard and creatively for the funds to do what they believe needs to be done. They get made, in short, by whoever manages to control the allocation of funds at any given point. You can argue educational philosophy all day and all night, but when you come right down to it, the activities and programs that get funded are the ones that happen.

Rossmiller sheds some light on why it's hard to make decisions about educational spending.

According to Rossmiller, decisions regarding school funding are based on three values—equity, efficiency, and choice or liberty. Each of those values is valid, but each competes with the others, he says.

An examination of those three values makes it clear why it's so hard to make decisions about what programs and services should be funded and which should not.

Equity or equality of educational opportunity is a common slogan that is difficult to put into operation. For one thing, it's hard to agree on what it means. Definitions of equality have changed over the history of the country.

The first definition was to have schools available to all children, the so-called common schools. That goal was accomplished to a certain extent by 1850, at least insofar as white, male children were concerned. In this century attention turned to attempting to give every child access to a minimum educational opportunity.

A more recent twist has been the focus on guaranteeing educational outcomes, a goal that Rossmiller says is unattainable. More realistic, he says, is providing equal access to learning. "Our task is to try to bring resources to bear in the educational process in a way that will permit every student an opportunity to maximize his or her potential, whatever that may be—certainly not to guarantee that they will end up in the same place.

Efficiency or effectiveness, Rossmiller's second tenet of school finance, means acknowledging that there is never enough money to do everything. So the goal must be to get the most bang from the buck. "Accountability" is a slogan often used in conjunction with efficiency. The latest manifestation of efficiency is excellence in education: people want the schools to prove that taxpayers are getting their money's worth.

Liberty or freedom of choice is the final leg of the Rossmiller's triad of values. One example of freedom of choice, says Rossmiller, is local control, making decisions locally instead of in the state capital. Other examples are magnet schools, vouchers and open enrollment efforts—efforts to give students and their parents more freedom to decide where children should go to school.

Almost everyone agrees that equity, efficiency, and liberty are important. "I think that if I were to go out and ask the typical person walking along the street whether they agreed with the idea of equality of educational opportunity, and whether we ought to be efficient as possible, and whether we ought to give people the power to make their own decisions, probably 99 percent would say, 'Yes, we want to do those things.' "

But that very consensus may work against achieving any one of the three values. "These three values cannot be achieved simultaneously. We're always making choices about which ones are more important. We can achieve all of them to some degree, but we cannot achieve all of them optimally," notes Rossmiller.

Until we decide what we want to achieve and how these three values—as well as other competing demands—can be balanced, we won't know "how much" is enough. And we won't know how well the schools are doing. Unfortunately, as Rossmiller points out, that involves hard choices, sometimes heartbreaking choices.

For example, consider the money spent to educate the handicapped, a priority in Illinois and the nation. Dedicating a large chunk of education funds to educate each handicapped child to the full extent of his or her potential meets the equity test, providing equal educational opportunity. On the other hand it could be argued that the money could be spent to greater advantage for society—more efficiently—if it were used for gifted and talented students most likely to make the greatest contributions to society.

Vouchers present a similar conflict. The use of vouchers increases choice. But vouchers could work against equal educational opportunity if they encourage resegregation of schools along religious, social class, racial or economic lines. That could happen if, as some fear, vouchers encouraged more parents to abandon public schools they think don't work in favor of private schools or better public schools.

Even compulsory attendance, a bulwark of the public education system, represents conflicting values. It fulfills the equity goal by guaranteeing all children will be exposed to a minimum number of years of schooling. But it does that at the expense of liberty by removing individual choice. In addition, compulsory attendance may drag down some high schools by loading them with youngsters who don't want to be there, working against efficiency.

During different periods in this country's history, different values have predominated. From 1965 to 1975, an era of comparative affluence for public schools, equity dominated. At the federal level, the Elementary and Secondary Education Act of 1965 targeted money to disadvantaged children, and the Education for All Handicapped Children Act a decade later guaranteed programming for handicapped students. At state levels there were comparable laws.

From 1970 to 1975, efficiency moved in, in the form of schemes to improve productivity such as management by objectives and program planning budget.

The underfunded excellence movement of the 1980s is a current example of the concern for efficiency—a mandate to do more with less money.

As we enter the last decade of the century, the value of liberty is moving onto the scene, with proposals for vouchers and other ways to let parents choose where their children will go to school. Some may see the increased interest in choice as a way for state and federal governments to shrug off their responsibility to educate all children.

School finance is a difficult and controversial subject. As the old joke goes, only two people in the world understand it and they disagree. Still, even those who may differ with the specifics of Rossmiller's analysis will agree that the issue is not one of dollars and cents, but one of competing values and of complex, difficult decisions.

In part, that may be because making a choice means admitting we can't do it all: we can't save all the children. And we sure can't teach them everything anybody thinks they should be taught.

As long as that is the goal, educators will be hampered by a nagging sense of failure. They can't meet society's expectations or their own—because the expectation is that they will do it all.

Unless that expectation is modified and made more realistic, the record will continue to get worse. Every day the number of children who require special handling and extra resources is increasing. "Doing it all" will become a bigger and bigger chore until eventually we're likely to discover that we're working harder and harder to achieve less and less.

If we make choices about what we can and will do, we still won't do it all. But we'll stand a much better chance of doing some of it.

As we look to the foreseeable future, it is probably safe to guess that there still won't be enough money to do everything everyone thinks the public education system should do.

"Given national trends, I would believe that over the next 10 years, and into the 21st century, there will be continuing struggle, hopefully successful, to increase the use of revenue from other sources, other more general tax sources, other sources that are perhaps fairer in their treatment of taxpayers than is the property tax," says

Rossmiller. Recent tentative moves toward increasing the state income tax and other taxes seem to bear out this prediction.

But the resolution of Rossmiller's competing values and the making of the necessary tough decisions is likely to be a long time coming. In the meantime, what hope is there for our schools? Rossmiller envisions a number of possibilities, ranging from practicable ideas already in use to visionary notions of what may come to be.

- **School-based management.** School-based management, Rossmiller believes, can improve both equity and efficiency. "I've been in several schools that worked. Schools where people walk around happy." In such schools teachers are empowered, they are viewed as professionals and they are given responsibility and accountability for the curriculum and for teaching: "They are encouraged to try things and if it doesn't work, it's risk free."
- **Teachers as managers.** Research shows, and most would agree, that the key to effective schooling is the classroom teacher. Rossmiller thinks it would be useful to think of the teacher as a resource manager. "The classroom teacher has to decide how to use time, instructional materials and the talents of a group of youngsters . . . and it's their skill in working with those resources, including their own knowledge, that will determine how effective their classroom will be and how well their students will learn."

Yet, teachers aren't thought of as managers, and generally they aren't prepared to be managers. Moreover, by treating all teachers alike in terms of salary and other rewards, we fail to make the best use of the best teachers.

- **Choice and competition.** Greater choice could promote academic competition, and Rossmiller thinks that would be a healthy development. "I very much favor more choice in education. I favor competition. I don't understand why we value competition in athletics and in music, yet in academic pursuits, we tend to poo-poo competition.

We don't provide recognition and support for those who excel in academics that we do for those who excel in some other areas which are important—but certainly are no more important that the academic aspects of schooling."

Among Rossmiller's more visionary notions:

- "Peace could break out. It's unlikely, but if it does, think what that might do in terms of the national budget and the need for the kind of expenditures we make for national defense."
- We might have a Value Added Tax, a major revenue producer in Europe. The Value Added Tax is added to goods and services at each step of the production and retailing process. It's one reason why many consumer goods and services cost a lot more in western Europe than they do in the United States, and why individual standards of living are lower in western Europe than here. And those are two reasons why it probably won't happen here.
- "Maybe, most importantly, the older generation might become less selfish."

In the past, older generations subsidized the education of the current generation, Rossmiller observes. "Today, we're asking young men and women to borrow large amounts of money and essentially leave college owing a lot of debt . . . Instead of being concerned about maximizing our human resources, we worry about Social Security. I find it inconceivable that people who have $50,000 of income a year, maybe more than that, worry about paying tax on their social security.

"I think we have lost sight of the fact that we need to invest in the future—not in the past. That's not to say we ignore older people. But it is to say that we pay more attention to the younger people and try to make sure that they get an education of quality."—MDK.

Sources

Richard Rossmiller. Professor and chairperson, Department of Educational Administration, University of Wisconsin, Madison, Wisconsin 53706.

GETTING FROM HERE TO THERE

"All this will not be finished in the first one hundred days. Nor will it be finished in the first one thousand days, nor in the life of this administration, nor even perhaps in our lifetime on this planet. But let us begin."

—John Fitzgerald Kennedy

VISUALIZATION 101: IMAGINING THE SCHOOLS OF THE NEAR FUTURE

"Do you think you can do it? Can you really create the school for the twenty-first century?" challenges Larry Hutchins. "My hunch is, somewhere down deep inside you, you don't think you can; or at least you're concerned that you can't, and you don't see how you're going to get the other members of your board to go along with you. Do you believe you can succeed?

"A lot of us go into this school change thing with 101 reasons why it's not going to work: the state won't let us; there won't be enough money; the unions will never agree to it; our fellow board members will never pass it; we'll never get a superintendent who understands what we really want here; the principals are too lazy; whatever. None of those things are true. My point is simply that there's nothing holding us back except what's in our head. It's a question of what we believe about what might become.

"Do you have a vision of what you might become somewhere down the line? Is there something you're shooting for? Do you have any goals? Do you have a positive possible school in mind? What is your vision of what this place could be? I don't think it's the vision we had from the past. That design is not working. The system is not working anymore in relation to the needs of society, the needs that have changed so drastically in such a short period of time."

Larry Hutchins speaks gently, in a soft Midwestern accent. His voice doesn't convey the sarcasm that one sometimes expects from intellectuals; in fact, he sometimes worries that his inflection is a bit too bland, too unassuming, even boring. He jokes that the reason for this is that the English language contains only 42 sounds; not enough to add excitement to speech.

But underneath the placid voice of C. L. Hutchins is a deep river of discontent with American education, which overflows the banks of his voice and floods the listener with ideas that demand attention.

American education as commonly practiced, he says, is the development of a group of New England industrialists from the mid-nineteenth century who needed a system to indoctrinate youth into a pattern of behavior that would make them better factory workers. Through the efforts of Horace Mann, an educator who had travelled to England and viewed the "Lancastrian System" of education in use in the factory towns, the American educational system took the shape that, by and large, it still has. The main purpose of education as put forth by Mann was to take the students "out of the immoral influence of their families and teach them to be on time, to follow orders, to not talk back." Even the textbooks of the day were designed to control the information children received.

Part of this control was to keep children away from religious ideas that might loosen the control of the industrialists. So American public education has been secular ever since, though it had been a church-related system in New England for generations up to then.

"Why would you want a system like that?" Hutchins asks. "Because that's what the industrial society needed. But is that what we need for the twenty-first century?

"If you talk to the personnel directors of companies, they will sound a lot like those folks who were talking to Horace Mann. But talk to the CEO's, and you'll hear a different story. 'We've got real problems here,' they will tell you. 'If we don't do something to solve them in the next two or three years, this company isn't going to make it.' "

The United States is in the throes of a new era, a post-industrial, information-and-service era. The strengths of our vast land and natural resources are not going to be of as much help as they have been for the last several centuries. Where we once exported our goods to the entire world, now the U.S. runs a deficit, taking in more goods from abroad than it can sell overseas. (Although John Naisbitt does not agree with how the U.S. keeps those kinds of statistics, as the profits from American companies, products, and services already overseas are not counted in the Gross National Product.) What is needed for the next century is a new metaphor, a new guiding design for society and for education. But how do we get there from here?

The first thing that must be done, according to Hutchins, is to assess where we are now. "Know the community from which you come; see what's been going on in your communities in the last 30 years." This demographic study will indicate what people are really doing, which is quite often different from what they think they are doing.

For example: "In 1955, the last year of the industrial society, 60 percent of the jobs in the country were production jobs; now, less than 20 percent of the jobs are production jobs. In that same period of time, we have moved from a situation where less than 20 percent of the jobs were service jobs to a situation where more than 60 percent of the jobs are service jobs; almost a 100 percent turnover in the 60/20 split."

Along with this change in the shape of our workplace, there is an equally great change in the constitution of our families and communities, according to Hutchins. In the same year that the industrial society reached its peak and began subsequently declining, "50 percent of the households in the country had school-age children in them. Today, less than 25 percent of the families in this country have school-age children in them. And of that 25 percent, only 25 percent, or 1/16th of the total population, are traditional 'Dick and Jane' families where the father works outside the home and the mother stays home and manages the family."

That kind of family was once the norm, and is still a controlling metaphor for many young people growing up today, who aspire to having a family of their own "someday." But the reality is quite different.

Hutchins finds that teenage girls graduating from high school, but not planning on going on to college, "don't sound all that different from when I was in high school back in the fifties. (They say) 'If I can just get a man, if I have kids, it will all work out. We'll make a go of it, even if I have to work at McDonald's in the meantime.' But the hard realities are that 95 percent of these young women will at some time be heads of households, with no one else contributing income to the family. If they don't get a first-rate education, a first-rate preparation now, they will be doomed to living in the service economy for the rest of their lives, and that's not a very pretty picture. The only hope we have really, is that if they don't choose to go on to college, we provide them with some kind of career skills in high school. And right now, our vocational education programs aren't worth the powder to blow them up; they're still teaching auto mechanics, typing . . . ."

This criticism of vocational education is based on the fact that the kinds of programs offered are, by and large, still focused on the needs of the industrial society, and are not aiming towards the kinds of skills that will be required in the twenty-first century.

"In fact," says Hutchins, "most of the jobs in the twenty-first century will be in small businesses that either you start or are a key member of because there are only a half-dozen or so people working there—and we don't do anything to prepare kids for that kind of situation."

According to Hutchins, another 25 percent of families with children now have both the mother and the father working outside the house during the day. And even with both parents working, many of these families do not have the standard of living that they had when the parents were children growing up, during the "Baby-Boom" post-World War II era. And that's largely because the standard of living, when measured in steady dollars, has actually declined during that period—and because the population boom caused by the baby-boomers has increased the number of people competing for the middle and lower-level jobs."

The harshest change, and the one most often overlooked by today's young people is that another 25 percent of current households with children are those where there is only one parent; this is the fastest-growing segment. Of this group, 94 percent are households where the mother is the only parent. Half of these mother-only families are at or below the poverty level.

"Even if they are Anglo, living in the middle of a suburban area in the house and neighborhood where they were initially married and having kids, they may well be below the poverty level because somebody is not making the payments that need to be made, or they are so low that they come under the classification of poverty. The research is beginning to emerge that even though women in these situations mean very well, the fact that they have to be working most of the day, and that they have so many duties to perform leaves them less time to spend with their kids, and the result is their kids don't get quite the same shake."

The last 25 percent of the families with children are what Hutchins calls "reconstituted families." These include many different kinds of arrangements: kids who live with grandparents, aunts, or guardians who may not even be blood relatives, such as foster care arrangements. These are the children who, in general, receive the least attention and have the least security during their formative years—and, along with single-parent families, this is a group which is growing rapidly.

Another demographic trend that will strongly affect schools and society over the next four decades is the changing ethnic and racial composition of the U.S. population.

"Somewhere around 2010 to 2015, we will reach a point where blacks will no longer be the largest non-anglo minority; hispanics will be. And in certain areas, certain communities in this country, that is already the case. Even more significant, somewhere around 2025 to 2030, anglos will not even constitute a majority in this society. When most of the kids you are now educating will just be reaching their middle age, we will have a society where anglos don't constitute even 50 percent of the total population."

From an educational point of view, the changes in the makeup of families "have dramatically altered the kinds of students that we have, and those situations are going to become even more prevalent as we move into the twenty-first century."

One reason for this is of great importance to educators, and is often overlooked. That is, the years before the child enters kindergarten are the most important in setting up the child for life. Enrichment that occurs quite naturally when an educated mother has time to pay full attention to her children does not happen when both mother and father—or increasingly, just mother—are not at home during most of the day. Although programs like Head Start are of some help, they cannot make up for not having a full-time mother who has both the time and the background to enrich her own children before they enter the public school system.

One place this shows is in language acquisition, the heart of education for early elementary students. The earliest form of language acquisition is learning new words—oral language skills. The next step is the transfer from oral language to written language. This involves breaking three codes: the semantic code, the meaning of words; the grammar code, how words work together in sentences and paragraphs; and the phonetic code, how sounds and symbols are graphically represented as written language. But the basis for everything is vocabulary.

"It takes about 10,000 words to do well in high school," maintains Hutchins. "But we only teach 5,000 of those words in the elementary school, and the assumption is that you get the other ones because of who you are and the family background that you have. Hey, who wins and who loses in that situation? Go back to the demographics, and the situation that prevails in most households today."

The problem of early differences in language acquisition multiply as the child grows older. "If you haven't mastered the transition from oral to written by the time you're at the end of third grade, you're in deep trouble, because there's more new material introduced at the fourth grade level than at any other grade, K through eight. It's like being at the end of a runway. If you don't have enough airspeed, you can't keep up in science and social studies and all those other things because you don't have the language skills to do those things. Well, you know who wins and who loses. The problem is, then we use standardized tests to confirm that those kids are, indeed, losers."

And, as Hutchins points out, the purpose of a standardized test is to fit all the children into a neat bell-shaped curve, with half below average and half above average.

"Why would you want a system like that?" he asks. "Because we wanted 60 percent of the people to work on the production lines of America. They didn't need a good education, at least not in the sense that we need it today; and so they designed a system that worked that way. Is that the kind of system that you want for the twenty-first century? Is that what's going to keep us at the top of the heap internationally? I don't think so."

It would be fairly easy to fix the system; teach the "other" 5,000 words, and the 300 out of 360 graphophonic symbols that aren't usually taught; level out the "hump" in the fourth grade. We have educators who can do all these things, certainly. "The problem is, no one acts on that data, because no one understands, on the level they need to, the current design."

Educators, according to this scenario, spend all their efforts trying to make improvements in a system which no longer fills the needs of those it is supposed to serve. It's a bit like trying to fix the lights when the electric generating station is no longer operating to produce electricity; the effort produces no results. And that is why Hutchins has focused on the society, the demographic analysis, rather than the curriculum. The older system of education, which has been operating for over a hundred years, that Horace Mann put into effect for the industrialists of his day, did just that. It focused on the needs of society, and from an analysis of society's needs, designed (or copied) a system which met the needs which were current early in the industrial revolution. Any workable improvement in today's education must follow that same formula.

It makes sense, in this context, that the American educational system is having so many difficulties. The system is designed around needs that are no longer valid, and has become so entrenched that any movement towards restructuring is often seen more as a fight for turf within the system than as a means of making the system meet the needs of the world we now live in—the world the children we are now educating will inherit and spend their lives in. For the children in school, that future is now, for if we fail to give them the skills they need to maneuver in the world of their adulthood, we have doomed them to a minor place in the scheme of things.

What should concern us, as well, is that by failing to redesign the schools, we are also dooming ourselves. As the American standard of living declines, those of us who are now the educators and board members will be supported in our retirement by generations of Americans who will not be world leaders, as the last several generations have been, but will become the cheap labor pools of the future world.

What Hutchins suggests as one of the first steps towards changing the system is, in itself, likely to cause controversy. "Trust the teachers," he says. "Give your teachers some leeway to use their instincts; they know it isn't working, they know they're having difficulty with it. They think they could develop a better system, but they're usually very frightened by the prospects of doing anything that is at all out of the ordinary. And, unfortunately, boards many times hold them back. We're very conservative folks."

But teachers are also partly to blame for holding back progress toward new ideas, especially when those new ideas challenge long-held notions of the teacher's role. For example, Hutchins cites a study IBM commissioned from the Educational Testing Service to prove their claim that the IBM Writing to Read program would, indeed, teach first graders to read, write, and correctly spell 4,000 words at the end of their first-grade year, as the company said it would. The study did show that IBM's program would do what it claimed, if used as directed.

Many school districts claimed they did not know enough about the program to make a decision, or believed it was too expensive. But the real reason the program hasn't caught on, says Hutchins, "is that it threatens the establishment of the system. You know who doesn't like the program? Second grade teachers. What do you do with your curriculum if all the kids coming in to your class can read and write and spell all the words you thought you were supposed to teach?"

When Larry Hutchins speaks of redesigning schools for the future, he doesn't refer to the structure of the building; whether it is open or closed in an architectural sense. He isn't even selling any particular brand of curriculum to solve all problems. What he is selling is vision, based upon analysis of the needs of the community in which the school is located. At its heart, this is as radical as any educational philosophy ever proposed, for to bring this vision into reality requires the cooperation of the business, educational, and governmental sections of the community; the participation of the teachers and administration, as well as the school board; and the trust and willingness of each group to join with the others towards a goal-setting and goal-achieving process that may not fit the old molds of our educational system, the safe state-inspired curriculum, or even the achievement-test oriented skills that have grown up as carbuncles on the ship of education in the last 130 years since Horace Mann envisioned a system of education to fit the needs of the Industrial Revolution that was just beginning in mid-nineteenth century America.

"The bottom line is, you need a new vision of what you can have for your school, and I think that vision can drive the success that we're all looking for."

The vision needs to be expressed, written down, detailed in describing what is to be accomplished. It needs to be a cooperative venture, because too often the visions of education are someone else's visions, and the "someone else" is not part of the group that will put the system into operation, or live with the results. Only when all parts of the community come to believe that the vision for an effective educational system is their own, and will fulfill their needs—needs which will change along the way, and require adjusting as they change—will the educational system become truly responsive to the people it serves, the children of the future, who are with us now.

"One of the best ways to develop a plan for the future is to write a story of what it would be like to be in this school of the future that you envision five, ten years from now. What would the experience of a student be? What would the experience of a teacher be? It's very persuasive stuff," says Hutchins.

In summary, says Hutchins, "I told you that you need to do strategic analysis, and I've warned you not to stop there, because strategic planning, at least as it's being promoted today, doesn't go on to the design and the implementation issues. I've told you that the really critical thing that teachers and you need are a new design. I'm not talking about some fuzzy, soft thing; there is a thing called the technology of design, there is a process that's there. The culminating product of that design can be a story which is very marketable, very salable to your community. And you've got to believe that you can do it. That last part, mushy as it sounds, is probably the most important part of it."

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It is interesting to view Hutchins' remarks at the Education for the Twenty-First Century Symposium in light of the subsequent release, two months later, of the Carnegie Corporation's report, titled *Turning Points: Preparing American Youth for the Twenty-First Century*. According to one review (Thomas Shannon, Executive Director of NSBA, in *School Board News*, July 5, 1989, p.2), the Carnegie Report called for, in part: " . . . a holistic approach to schooling, more authority at the individual school site, and integrated instructional program with interdisciplinary teams organized by concept rather than the clock, caring teachers/counselors who truly get to know students closely over a long term, and the necessity for connecting each school closely with its overall community."

It sounds like Larry Hutchins was right on the money. In terms of integrating the school with the community, giving the teachers more power to teach subjects in ways that are relevant to the needs of the students, as opposed to the needs of the state or the testing services, and emphasizing subject comprehension instead of the almighty time-clock, Hutchins called for educational reforms sounding amazingly like those of the Carnegie Corporation's Council on Adolescent Development. But where the Carnegie Report merely suggested areas of change, Hutchins and McRel have already existing programs for accomplishing that change through individual school systems.—JLE

Sources

C.L. (Larry) Hutchins. Executive director, Mid-Continent Regional Educational Laboratory (McREL), 12500 East Iliff, Aurora, Colorado 80014.

The Mid-continent Regional Education Laboratory (McRel), of which C.L. Hutchins is executive director, serves seven states in the upper midwest, but does not include Illinois. McRel is one of nine federally funded educational laboratories in the U.S. which work with educators in their regions to provide educational research findings of use in planning for the future needs of those regions. Much of McRel's influence is seen through its work with state education departments, state-level policy makers, colleges of education, and large associations; thus the emphasis on demographics as a starting point for educational planning. But McRel also has material available for the use of individual school districts under its "School Improvement Program." One set of materials is called "Achieving Excellence," and is a site-based decision-making and management system designed to help schools and their communities gather the demographic information, and assess the needs of the community as part of the process of improving the school system. The materials can be ordered for use of the district on its own, or with the additional aid of consultants trained in implementing school-system change. Both Achieving Excellence and any consultation needed to make the program work may be ordered by districts in Illinois, even though the state is not part of the McRel region. Numerous publications are also available through McRel, including an excellent monograph published by the Association for Supervision and Curriculum Development (the umbrella organization of the nine Regional Education Laboratories), titled *Guide to Strategic Planning for Educators*, that in the opinion of this board member should be read by all school board members whether or not they envision changes in their schools. There is also a well-written and readable educational journal from McRel titled *Noteworthy* that devotes each issue to a single topic, such as "Schools of the Future," "Rural Education," "Teaching Tactics," and like issues of interest to educators.

For information and materials, contact: McRel, 12500 East Iliff, Suite 201, Aurora, Colorado 80014; 303/337-0990.—JLE

ENCOURAGE THE 15 PERCENT

Every organization has three kinds of people, according to California-based education consultant Richard L. Foster.

About 15 percent are innovators. They want to introduce changes and aren't afraid to depart from established precedent. Foster calls them "15 percenters." Another 75 percent are followers. They are dependable, they do what is asked of them without much complaint and they get paid. He calls them dynamic conservatives. The remaining 10 percent are resisters. They are injustice collectors whose goal is to discourage you and use up your time. He calls them stones and adds that as they get older they become boulders.

If your organization has problems and you want effective change, you must encourage the 15 percenters, he says.

In his 15 years as consultant to dozens of school districts and state education associations around the country, Foster has watched a number of successful programs evolve from innovative ideas.

A K-12 school district in Michigan's upper peninsula has a program in which parents and grandparents switch places with the youngsters for a day. They not only replace the student in the classroom, but are expected to do the homework assignments as well. Besides increasing parent-teacher contact, the program promotes "a greater understanding of young people, more respect for teachers and more openness within the school system," he says.

Teachers in several school districts are now keeping the same students for both kindergarten and first grade. "This allows the normal developmental process of children to be encouraged and reduces the problem of repeated grades at such an early age," he says. In addition, teachers "stop talking about preparing students for first grade. They're preparing them for themselves."

A number of school districts around the country have also begun cooperating with the local business community. Some business leaders come into the schools to talk to students and teachers about the job market, ways of working and creating change. Other businesses release employees from their companies to teach, and encourage teachers to work in industry during the summer months. These business leaders "have decided that their school systems will not fail," he says, and adds, "More mutual respect develops between business and education."

In the ever-continuing debate between half-day and all-day kindergartens, more schools in recent years are returning to the concept of full days. For those children who attend all day, "research shows gains in growth and learning through fifth grade in terms of reading, arithmetic and basic skills," he says.

Foster acknowledges that his advice about encouraging the "15 percenters" is more easily given than followed. "Research shows that most of you would like to make changes without any pain. It's impossible. Change, by nature, is like driving down a two-lane highway when it's dark and you're traveling about 55 miles per hour and everybody else is doing 35 and you have to pass. You have the same anxiety. You're being forced to do something different."

For those who do want to support the innovators in their organizations, he offers a few suggestions.

- Hire them, acknowledge them, give them space and protect them from the rest of the staff. "Learn how to live with mavericks. Yes, they'll make some mistakes but so do the stones."
- Stress cooperation over competition. "The skills that got you your job were competitive. Now you need cooperative skills." Cooperation promotes "the intelligent exchange of ideas, motivates energetic people to become more interested in their work and creates a more humane environment. Collaboration and consensus building are unique to the best of America's corporate society and almost nonexistent in the political arena."
- Solicit ideas rather than reports. When you send people to a meeting or conference, "don't ask them to come back and give a report because nobody listens. Have them come back with one or two ideas that you can use."
- Allow the person who has the idea to put it in place and train others. This concept, already employed by 3M, "creates a meaningful reward system, releases ideas into the system and lets people flow with them. Ideas don't just fall by the wayside, but get carried out." He further suggests, "Instead of giving people sabbatical leaves to leave you, give them sabbatical leaves to teach inside the system."
- Don't allow the resisters to gain control. They will bog down meetings with complaints and, on the job, will be "organizing to keep you busy so you won't have time to think about change. They'll have stuff on your desk, calls to make and all the rest that is purposeful behavior.
- Speaking of meetings, see how long you can go without holding one. Reducing the frequency of meetings encourages people to consider long-term as well as short-term

LESSONS FROM BUSINESS

A number of business people—and educators—in recent years have said that school systems should take a cue from business and operate more like corporations. Some, in fact, may go too far with this idea. There are, after all, significant differences between corporations and schools. It's generally easier to figure out whether a company is making a profit than it is to figure out whether kids are learning what they should be and as much as they should be. Corporations have fewer legislated restrictions upon their operations and their goals, and can raise their prices much more easily than schools can. And, the products of most corporations don't have parents.

In fact, adapting the language and methods of business could be harmful in the extreme, if schools go overboard with such concepts as quality control and bottom line accounting. Uniformity and mass production may be desirable and efficient—when the product is anything but kids.

So it doesn't pay to carry the comparison too far. On the other hand, success is success and it would be foolish to reject the counsel of those who have achieved it. And when it comes to success, it's hard to argue with McDonald's. The fast-food behemoth is not only the leader in its industry, and a corporate success by any standard, it has literally changed the way America eats. Before McDonald's, drive-ins were places where dubious-looking teenagers hung out. Now they're the restaurant of choice for the middle class. More than seven cents of every dollar Americans spend on food outside the home is spent at McDonald's.

So what can school officials learn from the folks who made "Big Mac" a household word?

Stick to basics and keep it simple, advises Shelby Yastrow, senior vice president, general counsel and assistant secretary at McDonald's Corporation. In his 11 years with a company that has over 600,000 employees at over 10,000 restaurants in 50 countries and $16 billion in annual sales, Yastrow has had the opportunity to see that philosophy in action. And while he stresses that he speaks as a representative of the business community rather than an education expert, he does offer some guidelines others in leadership positions may wish to borrow. (In some cases, educators may wish it were possible to borrow them.)

Stick to those things you do best. So far, McDonald's has resisted the current trend of expanding its services or diversifying and acquiring other organizations. Though the company has a hotel for visitors and students at Hamburger University, they contract with the Hyatt to run it; and while they buy and sell more realty space than any other company in the world, they use only outside realtors and appraisers. "We don't even run our own company cafeteria. We just run McDonald's restaurants."

If you handle the small details correctly, the big problems are less likely to develop. "At top management meetings we taste and discuss the sandwiches more than we worry about the economy, politics or demographic trends. We know that 99 percent of our success depends on what happens in that last three feet of counter separating us from our customer. And that's where we focus our thinking."

The analogy to schools is clear—99 percent of the success depends on what happens in that last three feet of space separating the teacher and the student. Of course, it's easier to improve the taste of a hamburger or the way it's served than it is to improve the way teachers teach. Still, the principle holds.

Those in charge should be familiar with every aspect of the business they're operating. Newly-trained personnel are not allowed to take an office at McDonald's until they've worked a while in a restaurant doing everything from opening and closing to waiting on customers to cooking and cleaning up. After that, every employee—whether a chief officer, secretary or lawyer—spends one day a year working in a McDonald's restaurant.

If you leaf through a few education periodicals, you'll find interviews with successful principals and superintendents. They invariably attribute a good part of their success to getting out into their schools—walking the halls, talking to everyone from teachers to students to bus drivers, teaching a class or leading a discussion group. The theme is repeated often enough to make you think there might be something to it.

Avoid excess bureaucracy. "We work hard to stay small, or to stay thinking small, and we try to avoid all the bureaucracies that can tie up an organization like ours in knots. We don't have organizational charts and we don't have committees. Whenever possible, we skip long written reports. We try to communicate by talking with each other." Also, "every decision at McDonald's is made at the lowest level possible. Even our annual budgeting process is bottomup. This includes all personnel additions and expenditures."

Decentralized school-based management is a hot topic, and what may be its acid test is about to occur in Chicago. A law passed in 1988 calls for the decentralization of the city's massive public school system, with local school councils making important decisions for each of the city's nearly 600 school buildings. Some initial confusion is probably inevitable; but if the experiment is allowed to continue long enough, we will have the opportunity to see school-based management succeed or fail.

Know the difference between planning for the future and preparing for it. "Planning is thinking and preparing is doing." And every school official knows how hard it is to move those carefully-crafted plans from paper into the real world.

Know when to leave well enough alone. "When we prepare for the future, we start by looking at the present. If we like where we are, we'll try to figure out what we did to get there and make sure we do the same things to prepare for the future. If we're pleased with what we find in the present, then we know that in the past we must have prepared for the future in the right way."

At the same time, recognize when change is required. "We believe our customers are our consultants and when their tastes change, so do our menu boards." In response to the changing tastes and nutritional concerns of their customers in recent years, McDonald's has increased its offerings to include salads, decaffeinated coffee, skim or 2 percent milk, and fish and chicken entrees as well as beef.

Adding salads and decaf to the fast-food menu don't have quite the far-reaching implications of adding new courses and programs to the public school menu. But as their communities change, schools are learning that they have to meet changing needs—or face the consequences: lack of political and financial support.

When you make a mistake, don't waste time fighting it or trying to justify it. Acknowledge it, adapt and proceed accordingly. McDonald's has opened restaurants in places they never would have considered 10 or 15 years ago. "When we sent one of our licensees to England, he followed the pattern that we used here. He went out to the suburbs and found himself disappointed. Nobody came to McDonald's in the suburbs. Why? It's not a vehicular society. They walk or they ride their bicycles. So instead of opening a free-standing self-enclosed building, he went to a building in downtown London that was 1200 years old and put in a restaurant. After we learned how to do it there, we came here and did it. We didn't have a store in New York City until just a few years ago."

Where there is no risk, there is no achievement. "When I use words like simple and basics, I'm not excluding risk taking, hard work, vision, innovation and just pure guts. In the 11 years I've been with the company, I've never seen anybody held back for taking a chance or making a mistake, but I have seen people's careers sidetracked because they couldn't make a decision or because they played it safe."

A final principle of McDonald's operations suggests the thinking that has caused big business to emerge, in some instances, as an ally of the public schools and other public services.

That principle is: **Give something back to the community in which you do business.** In addition to the Ronald McDonald houses and several Ronald McDonald childrens' charities, the corporation sponsors a variety of educational and sports programs for young people.

More is involved than just public relations, Yastrow says. When it comes to business and education, "there is in my view a dependence that is not mutual. It is unilateral. You could get along very well without us but we can't survive without you. If we do our jobs poorly in business, the schools are basically unaffected. If you do your jobs poorly in the schools, we're dead meat.

"Last year, 10 percent of all corporate contributions went to schools and this will probably be increasing. It's a lot more practical and better business for us to have you teach the people to read than for us to do it."—DSE

Sources

Shelby Yastrow. Senior vice president, general counsel and assistant secretary of McDonalds Corporation, One McDonald's Plaza, Oak Brook, Illinois 60521.

STOP LOOKING THROUGH THE REAR-VIEW MIRROR

SCHOOL/COMMUNITY RELATIONS ARE KEY TO FUTURE

Close school/community relations are going to be the key to the successful emergence of the public schools into the twenty-first century—but educators and school board members have to hang onto the wheel, says Dallas, Texas, school superintendent Marvin Edwards.

"We're going to drive education by looking ahead, if we're going to be successful in the future," says Edwards, who is well-known as a school leader who can bring communities together. "This business of looking through the rear-view mirror has got to stop; this checking over our shoulder to see if they're coming and see how close they are—and therefore do what we have to do to show them that we're attentive. No. We have to stop that. We have to be ahead of them."

He calls upon school officials to take a proactive approach to community relations. "We should be proactive, we should be innovative, we should move toward partnerships."

He draws a lesson from an experience he had in a previous job as superintendent of schools in Joliet, Illinois. When he arrived in Joliet, Edwards said, a miscalculation in funds based on assessed valuation forced the school district to cut its budget by 25 percent. "We nearly went crazy," Edwards reports wryly. "We reacted. We called meetings. We explained it. We put out newsletters. We were interviewed by newspapers. We reacted."

With the wisdom of experience, he observes that "the way it should have been done was, before the fact, we should have put out all the information so folks understood it. We should have had groups that were working with the schools on an ongoing basis, and therefore, they would have been our emissaries. They would have been our voice for us. But there we were, out there, administrators and board members . . . we reacted."

In the future, Edwards believes that the art of school/community relations will mature, as public relations become of even greater importance. He cites three reasons why that will happen.

1) Schools not only will "change and rechange to meet the needs of a changing society," but they will be expected to deal with an increasing number of issues and new and different challenges.

Not only will there be more issues, but those issues will be more complex. For example, he says, a few years ago, the schools had to deal with a health issue—head lice.

"Now look at what we're dealing with: the issue of AIDS." Head lice was a comparatively simple issue, he points out. AIDS, however, has ramifications in terms of policy, curriculum, employee relations, legal responsibilities, medical responsibilities, internal and external communications—"all related to this one disease. We didn't have that with head lice, did we?"

And that's just one issue. Another is parent involvement. "Schools are going to have to reach out and teach parents to be parents, if kids are going to be successful."

He points out that the gap in achievement between poor children and affluent children begins to widen at third grade—when kids start having homework. That's when children with supportive, caring parents begin to gain a real edge over children who may be, for example, the offspring of a teenage girl who is herself a school dropout. The gap widens because the children's parents haven't been able to give them the experience and background to make learning relevant.

2) Schools will deal with this multiplicity of challenges and issues by "reaching beyond federal and state funding and reaching beyond your own employees." They will have to solicit broad-based assistance from the whole community, he says.

And school leaders must take the initiative to ensure that the community input is constructive, warns Edwards. Otherwise, "the next big move is that parents are going to come in and take over the schools." This is already happening in Chicago, he points out, where the legislature has given enormous authority to parents and other citizens to run local schools.

3) To get that assistance from the community, "we will need to have organized systems for initiating, feeding, nurturing, and utilizing community involvement—systems for using contributions from parents, citizens, businesses, agencies, religious groups, institutions, local colleges, universities, and a variety of other segments of the community."

School boards themselves have changed, Edwards believes. "There was a time when folks on school boards were the selected pillars—they were anointed, appointed, and not challenged. That does not occur any more. School boards now are more grass roots. People of all kinds with an interest in schools are finding their way to boards. They're not necessarily the financiers in town, or the folks who are the movers and shakers in other parts of the community; they are the people with a genuine interest, people who come to the board with different perspectives."

These people also represent many areas of expertise, and "some find themselves in a situation where they feel they know more than professional people they have hired to do a job and that causes somewhat of a dilemma," observes Edwards.

The dilemma, he says, is a blurring of the line between policy versus administration. "We need to be forever vigilant about where the line should be drawn, to be sure we don't walk over one side or the other." He urges school boards to be aware of the importance of policy as a tool for moving schools into the future. Boards, he says, "need to initiate and direct the changes that occur. They have to have a purposeful plan in order for positive change to occur." Administrators, on the other hand, "have to be more visionary, and help their boards see where they have to go.

We know a great deal about life in the twenty-first century, says Edwards. We know that when the class of 2000 graduates, the body of knowledge these 18-year-olds will have acquired will be greater than their grandparents acquired in a lifetime. We know that the workplace no longer will revolve around industry, agriculture, or manufacturing. It will revolve around service and information.

We know a great deal about population changes—we know that the nuclear family will become even smaller than it is now, that the non-working population will be more numerous, that both the underclass and the affluent middle-class will grow. We know that our population will be increasingly 'minority.'

"We know what's happening. We know where the world is going. And because we know , we must do something about it. Education has to change from inside. We can't wait until somebody tells us what to do."—JCB

Sources

Marvin Edwards. General superintendent of schools, Dallas Public Schools, 3700 Ross Avenue, Dallas, Texas 75204.

The Illinois Association of School Boards School Public Relations Service offers ready-to-use materials and ideas to help schools improve their public relations programs. Contact IASB, 1209 South Fifth Street, Springfield, Illinois 62703; 217/528-9688. IASB also offers a variety of books and publications for local school leaders.

THE ART AND SCIENCE OF CHANGE: DON'T FORGET THE HUMAN FACTOR

John Corbally—who jokes that he learned to use a computer so he wouldn't be considered illiterate by his granddaughters—recalls the classrooms of his childhood during the 1930s and early 1940s. Desks were bolted together in rows and students dipped their pens in inkwells when practicing their penmanship. He saw only one male teacher during his elementary school years. "Our father figure was the custodian," he says.

By the time he became a teacher himself in 1947, World War II and the atomic bomb had radically changed previous concepts of physics and chemistry, geography and history. For one thing, his students learned that the atom was not the smallest particle in the universe. These days, students are likely to sit in small groups rather than neat rows. They're learning about computers, and countries that didn't exist 40 years ago.

Corbally envisions an even different sort of classroom for students of the twenty-first century. He is certain that the use of computers for both reference and teaching purposes will increase greatly. "With the introduction of CD optical discs to computers, entire reference book series can be placed on a single disc. With the increasing breadth of data bases accessible from every personal computer equipped with a modem, the reference materials available to each classroom can be expanded exponentially." In fact, he predicts that technology will make it possible for children to be educated—or at least to receive the facts which might define them as being educated—without ever going to a traditional school building.

At the same time, he cautions that change can have negative as well as positive consequences. "It is possible for gains in one segment of our society to create losses in others. As we contemplate change, we need to ensure that we do not do things just because we can do them and instead must pay some attention to the impact of change on our fellow human beings."

He is disturbed by the fact that the traditional family in our society is disappearing. "Our claims that divorce has no impact on children or that growing up in a daycare center has no impact on children ring hollow—particularly when one talks to children and listens to their fears and concerns."

He worries about the fact that urban schools are graduating only a fraction of the children who should be completing school. "While it is appropriate to worry about the quality of the education being provided to those who are in school, we are going to have to pay increasing attention to the entire environment in which our children are growing up. We are going to have to stop assuming that it is the schools which can overcome the rest of the environment and produce 'educated' citizens."

This country is faced with a question even more basic than schooling, he says. "The question is whether or not we really do care much about our children. There are many signs that we are increasingly treating children as a necessary nuisance. We are bringing up many children who have low self-esteem and nothing is more dangerous to a society than to begin to stifle the idealism and the courage and the confidence in the young—the very group in which those attributes should be strongest."

However, he does not imply that technological gains and other changes are somehow evil. Instead, we need to keep in mind the danger of using the science of change without considering the art of change. "I consider art in this context to mean the humanistic aspects of change—the elements of change which honor and recognize the timeless and unchanging nature of the human being."

While the new century will bring much that we can't yet imagine, what will it bring in terms of basic changes in our human existence and in teaching and learning? Probably not so very much, according to Corbally.

"One is tempted either to overstate or understate the influence which learning aids will have in the twenty-first century," he says. "I do believe that the computer is going to make a difference in the classroom and is going to play a key role in converting teachers from individuals who have to do everything from clerking to teaching into individuals who really can devote their attention to the key functions of teaching." He also believes that teachers of the future will be neither afraid of nor overly impressed by computers, and cites the use of film strips, moving pictures, audio discs and television, each of which when new was projected to make a major change in the processes of teaching and learning.

He predicts that classrooms themselves won't change as much as some would think. Despite the technology that would enable children to be educated without going to class, he assumes that "we will continue to offer schooling through schools. These schools may contain more computer terminals than is now the case and the kinds of professional personnel within the school may be markedly different, but in general a school will still look pretty much like a school. This is related to the understanding that much of the learning which our children receive comes from their socializing in formal settings with other children."

He predicts that the basic goal of education will remain the same. "Our goal will still be the age-old goal of schooling in all societies and in all civilizations—the preparation of the next generations to assume their appropriate roles as fully participating members of their society. We will assist in preparing them for work, for citizenship, and for the assumption of responsibility for preparing the generations which will follow them."

He also foresees many positive changes. For example, curriculums are expanding to include the changing roles of women and the study of cultures other than western European. The length of the learning process is expanding as well. "People will stop thinking of graduation from high school or college as the end, and instead will see education as a continuing lifelong process."

Effective change, he says, requires a clear sense of purpose, a clear sense of both long- and short-term changes in the environment, and a clear understanding of those elements which are subject to change and those which are not. "As one attempts to look to the future, one is faced with the task of adapting an age-old set of human traits and characteristics to an ever-changing environment of technology and of knowledge.

"As one looks at that adaptation, one must constantly ask the key question: 'To what end?' The question of ends must assume new importance. It is not enough to imagine what we might do with new knowledge. It is necessary to contemplate what purposes we wish the uses of new knowledge to serve."—DSE

Sources

John Corbally. Member, board of directors and former president, John D. and Catherine T. MacArthur Foundation, Chicago. The MacArthur Foundation, 140 South Dearborn, Chicago, Illinois 60603.

TEACHING AND LEARNING

"Human history becomes more and more a race between education and catastrophe."

—H.G. Wells

EDUCATION DEANS SEEK TO GET BACK IN TOUCH WITH SCHOOLING

Education deans at our leading research universities want to transform radically both our teacher corps and the way teachers are prepared. The deans want to allow talented people to drop in and out of teaching, and they want to create special public schools in which university professors would work side-by-side with teachers and prospective teachers.

It seems, however, that teachers unions and the universities that house our education colleges might be the biggest obstacles to these reforms, for reasons noted below.

Known as the Holmes Group after a Harvard educator from the 1920s, the education deans have issued *Tomorrow's Teachers* (1986) and are at work on *Tomorrow's Schools*. These reports represent part of the effort of the deans to play a major role in long-term education change.

Women and minorities now have access to all kinds of professional careers. No longer does teaching have a captive pool of some of the best and the brightest from these groups. So for the first time, the desirability of teaching is being tested in an open labor market. And it is being found relatively undesirable, because of low pay, low respect, and very hard work.

To counter this flight from teaching, or from the thought of it, by many talented people, the Holmes Group proposes the creation of three clearly different levels of teaching, each with its own attractive features—Instructors, Professional Teachers, and Career Professionals.

Instructors would be bright well-educated adults interested in teaching a specific subject without making a career commitment to teaching. They might even consider teaching as their secondary work. They would, however, work from structured lessons and be supervised. They would not have tenure nor would they help shape school policy.

Professional Teachers, to be the backbone of the profession, would be certified, full-time, autonomous practitioners, specialists in both subject matter and techniques of teaching.

Career Professionals would comprise 20 percent of a school's staff. These folks would have responsibilities for educational policy, curriculum improvement, teacher training, and "action research," whatever that is. These career professionals would "appreciate and benefit from alternatives to their work directly with children."

These professionals, positioned at the top of the ladder, would clearly become the operating elite of the profession. The mix of their activities and responsibilities are more attractive than for the other two categories and, implicitly, they would be paid more, though none of this is suggested in a summary of *Tomorrow's Teachers* by Michael Sedlak, one of the report co-authors. (*Teachers College Record*, Spring 1987)

The most promising element of this concept of tiered-teaching activity is the recognition of the importance of attracting bright energetic people into teaching, even if—or especially if—they don't want to abandon other interests. Most disturbing is the hierarchy established, which would appear to exclude the Instructors and Professional Teachers from contribution to matters like policy development and curriculum development.

If the concept were to prove successful in attracting more of the best and brightest, many of the Instructors and Professional Teachers would be so sharp as to have more to offer in shaping educational directions than would the Career Professionals.

How would the teacher unions react? Not well, based on this writer's observations of union protectionism in action in the Illinois legislature, where the Illinois Education Association and the Illinois Federation of Teachers have been able to tenure and certify everybody except the school crossing guards. But that is why it is all the more important to confront the teacher establishment with reasonable approaches to the recruitment of bright and lively nonteachers into the teaching fold, even if on a part-time basis.

Most schools are outdated, declares Lauren S. Young, a professor of education at Michigan State University and co-director of the Holmes Group project on "Tomorrow's Schools." We tend to organize our schools like egg crates, Young says, "with one teacher within one room teaching students of one age."

Schools have been developed on an old factory model of assembly line education that "provided large numbers of people with minimal basic skills and modest numbers with advanced intellectual competence," Young adds. That is no longer good enough in a day when low-level positions in an auto plant or a steel mill often require work with computer consoles.

As a result today's schools are generally not good sites for preparing tomorrow's teachers. The primary Holmes Group proposal to rectify the situation is through creation of "professional development schools" (PDS) within local public schools. At present these schools exist only in the imaginations of the education deans, but they envision the schools would do for teaching professionals what the teaching hospitals provide medical students—guidance from the best researchers and practitioners within a demanding, real-world setting.

The PDS would not be analogous to the old university "lab" schools, with their generally highly-motivated, selected students. A PDS would be an otherwise regular public school in which all kinds of students were enrolled. The American Federation of Teachers is shaping a similar concept that it calls "professional practice schools."

I heard Young outline the PDS concept before an audience of school board members and their administrators. She envisions democratic, nonhierarchical communities of learning in which leadership is detached from role. I think I came to understand what she was talking about, yet a glance around the room of less-than-enraptured elected officials and practitioners suggested a gulf between the abstractions of academic concept-building and the need of school managers for tangible illustrations of how a PDS might really operate.

Young is not clear about the place of democracy. She says that professionals working in PDS "should be comfortable with democratic notions of knowledge. That is, their role is to enable people to learn, not to monopolize the sources of knowledge, nor use that tool to assert their authority."

She wants to break down the school pyramid. "We should uncouple leadership from roles such as superintendent and principal as leadership capacity exists in many people, including teachers." This dismantling of hierarchy also implies decentralization and school autonomy, as well as opposition to state mandating for local schools. It also seems at odds with the clearly structured, separated, and hierarchical roles described in *Tomorrow's Teachers*, outlined above.

The PDS would draw on community extensively. Young, who is a former urban teacher corps adviser, notes that, "The poor at-risk kids who are making it appear to be those who had strong relationships with an adult, possibly in Boy or Girl Scouts, where positive bonds develop. This is, of course, of great help *in* school as well."

High on the priority list for the PDS, in Young's mind anyway, is the challenge of developing new, improved methods for evaluating student "learning for understanding," which would replace or at least complement the present standardized tests. She points to certain "advanced placement" tests in which students have to write or otherwise demonstrate what they are capable of doing. She mentions also the possibilities of student exhibitions and portfolios of works completed as additional evaluation concepts to build on.

Young is sharply critical of her own Holmes Group colleges of education. "They have lost touch with the public schools," she declares. As the old normal teachers schools evolved into public universities, "the schools and colleges of education increasingly lost touch with the public schools and became increasingly absorbed with the academic status system."

Others agree. Gordon Hoke, professor emeritus of education at the University of Illinois at Urbana, estimates that no more than 10 percent of the faculty at our leading colleges of education have ever taught in a public school. He says, "The day when a graduate research university can play a significant role in teacher education is probably past."

Nevertheless, Young wants universities to create incentives for faculty to work in schools, and opportunities for school teachers to work at the university level, in democratic communities of learning and inquiry.

To do so would require separate faculties with separate tenure requirements, Hoke adds. He thinks this is unlikely, because the campus faculty hierarchies that operate above the colleges of education will be unrelenting in their demands that all faculty prove themselves via the well-known publish-in-the-right-journals-or-perish syndrome.

Young admits that most universities neither recognize nor reward academics who get down into the trenches. She also acknowledges that local schools such as those in Dade County, Florida, and not our prestigious colleges of education, are at the forefront of change (in Dade County's case with exciting shared management practices).

Professor Young sees inklings of change, however, as at her own Michigan State University where "some of our faculty are actually teaching at Spartan Village (a local public elementary school)." And the Provost at MSU has declared that an essay on the back page of the *Education Week* is as important as an article in the *Harvard Education Review.*

Time will tell if our leading colleges of education will reach out and connect with our public schools. Universities are intensely resistant to change, and colleges of education are generally not among the more influential components of university decision-making. Gordon Hoke hopes that the proposals set forth by Lauren Young become reality, yet he adds that, "the education deans had better be prepared to fight it out over the long haul."

Young understands this. "We're looking at long-term change—over 10, 20, even 30 years." The proposals for differentiated teaching and for professional development schools strike this writer, a person outside education, as eminently sensible. I am disquieted somewhat by my sense that it will require herculean effort from within the education community to make such sensible change.

I think we ought to measure the success of the Holmes Group, not by its commonsensical proposals, but by the willingness of the deans to get into the rough-and-tumble arenas of education politics and university politics to fight for the changes they have belatedly come to see as necessary.—JDN

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Lauren Young. Assistant professor of social foundations and social policy. Michigan State University, College of Education, East Lansing, Michigan 48824.

TEACHING VALUES FOR THE TWENTY-FIRST CENTURY

Answer this question with the first response that pops into your mind: What do you value?

* * *

Are you still there?

Values.

A simple word for a complex tangle of issues that create important questions in education now and as we look to the future. Considerable print space and discussion time has been dedicated to the question of whether the schools should teach values.

It may be, however, that this is not the right question to ask.

Most people think the schools should teach values. Polls show that most of the public feels that way (nearly 80 percent, according to Gallup Polls since 1980), and most of the thinkers and writers who pontificate on the subject conclude that yes, indeed, the schools should teach values.

Yet, the debate over teaching values always seems to end at the same cul-de-sac: Yes, but what values should be taught? And how?

The first question—what values—might be largely a smokescreen created by those who aren't all that concerned about whether children are taught values, but who want to impose their particular interpretation of values on the rest of society. Americans pretty much agree on what their values are, maintains one of the nation's leading thinkers on such issues.

Americans are without question a diverse group, observes Martin Marty, professor of religious history at the University of Chicago. As an example, he cites DuPage County, "America's image of America's middle—straight, upper, clean, Republican, Catholic, Protestant country." In this Middle American paradise, Marty finds 45 non-Judeo-Christian worshipping groups.

Nonetheless, Marty argues, a majority of Americans share certain values, and those values haven't changed much over the years. If you consider polls taken on beliefs in America since 1940, "you'd hardly know we've been through World War II, Cold War, boom years, civil rights, upheaval of the 60s, religious change, Vatican II. You wouldn't know any of that. Year in and year out, ask American people their values."

The highest percentage who said they believe in God was 97 percent, and the lowest was 94 percent. "We're either very consistent at belief or at lying," says Marty.

There are other values that would gain perhaps even more widespread agreement, and that have endured through time. Most people would agree, for example, that each human being is valuable, simply by virtue of being a human being. Most believe it's better to tell the truth than to lie, and better to respect other people's rights and possessions than not to respect them. We may not always live out those values, but we respond when they're brought to our attention and we're outraged when they're violated.

Marty compares debates over values with debates over the U.S. Constitution. Constitutional issues run through many of our national debates and controversies. The issues of strict construction and original intent came up in the hearings on the confirmation of Robert Bork and other justices to the Supreme Court. Separation of powers ran through the Iran Contra hearings. Yet no one has suggested tearing up the Constitution. "The issue is who's a better interpreter, who regards it more 'sacredly' than the other," he said.

So it is with values, Marty feels. The debate is not over belief in God, in country, in honesty. The debate is over how those values are interpreted, who interprets them, and how values are connected with being good persons, good children, and good members of society.

Schools are at the center of those debates. And Marty is among those who believe they should be.

Schools, Marty points out, are mediators between what Aristotle called aggregates and society at large. Aggregates are groups of people who share values and morals—a subcommunity based on religion, color, income or whatever. As mediating, or socializing, institutions, schools are supposed to teach members of those subcommunities how to fit into society at large. There are other mediating institutions, such as neighborhoods, clubs, and churches, which share some values with society while having their own individual reasons for existing. Ideally, the schools should be reinforcing values children learn from those other institutions. But those organizations have declined in influence, and the burden to act as a mediating institution has increasingly fallen on schools.

If children came into the school having been more strongly influenced by families, neighborhoods, and churches, the schools would have an easier time of it, Marty suggests. "If you situate children in other mediating structures, subcommunities, it is much easier to educate them. It is very hard when they come as isolated cells and the school is the only such agency."

The public schools, says Marty, "are victims of other debates, things that the rest of society can't settle somewhere else and wants the schools to settle."

Few school officials would disagree with that notion. They know all too well what happens when the school is "the only such agency." Expectations placed on the schools soar to unrealistic heights, and even the most dedicated educators and school officials are set up to fail.

It's pretty clear that many of the events that make life in the late twentieth century so frightening happen because some of the values that the majority of Americans hold dear are not being passed on to children.

Here are just a few of the stories that were in the news during the summer of 1989:

- A gang of teenagers savagely beat and raped a young woman in New York's Central Park—not for money or for any other reason that anyone has been able to discover, except for the sheer fun of it.
- In Pennsylvania, police found a seven-year-old boy and a nine-year-old girl playing drug dealer, selling bags of grass clippings as marijuana and sugar as cocaine. The police officer who discovered the game commented, "We just lost the war on drugs."
- Ten Texas high schoolers, "including members of the state championship football team, turned to armed robbery, ostensibly to cover gambling losses in high-stakes dice games," reports a *Christian Science Monitor* columnist (August 10, 1989). Curtis J. Sitomer notes that "the National Council on Compulsive Gambling says the United States may be headed into a decade where gambling will be the 'addiction of choice' among young people."

You can continue the list with your own favorite horror stories. If none come to mind, any issue of a news magazine or half an hour of national television news will provide plenty of fodder.

It's easy to identify some of the reasons for the breakdown of common values. Thousands of children go home after school to an empty house or to a single parent, generally a mother, who is preoccupied by trying to keep a family alive on poverty-level resources. Thousands more live in streets where the local drug dealer is the most constructive adult role model.

And the concept of success has entered the picture. For a while there, it became almost the whole picture. It is interesting to note that success is a fairly recent concept. In the not-so-distant past, most people assumed that their lives would be meager and hard. Such a state didn't represent "failure" but rather the natural lot of humankind. The goal was survival, not hyper-achievement. In such an atmosphere, cooperation and not individualism was emphasized. Only in recent decades have individual success and individual expression become first a concern, then almost a moral imperative.

"It's like the sneaker commercials on TV that say they can make you run faster and jump higher. The kids all want them. But basically, they all come from single-parent homes. Some of the parents are on welfare, others work. You got, say, ten hungry kids that are willing to sell drugs all night and all day to get some Adidases or some other name-brand stuff. This is the only way they're going to get it. The dealer takes advantage of that, you understand what I'm saying? He flashes the money in their face and says, 'You can have this, you can have that.' " Those were the comments of a drug addict interviewed by *Newsweek* (September 11, 1989).

The poor aren't the only ones afflicted by the "gimme" message of the media. Parents wonder if they would do better to spend time with their kids or more time at work, so they and their kids can have all the goodies. Teachers wonder if they're cheating themselves and their families by staying in an underpaid and undervalued profession; many of the best decide they are, and they leave the classroom.

Commenting on the gambling Texas football players, Curtis Sitomer observes that "A society that emphasizes chance and holds up to its youth the glitter of instant gratification shouldn't be surprised about the lure of gambling. The development of spiritual values at an early age, on the other hand, could well beat the odds and the agony of the point spread."

Today's children are growing up in a society that flaunts highly dubious values. Moreover, by and large, that society doesn't really care much about kids, and the kids know it. (Demographer Harold Hodgkinson points out that 40,000 infants in this country die in their first year of life—and, he maintains, 20,000 of them could be saved for the cost of an adequate diet and pre-natal exam for pregnant women.)

This is getting depressing, isn't it?

Lest we throw up our hands in despair, let us also note that there are other stories to be told, of youngsters doing volunteer work, taking part in national problem-solving competitions, or simply staying clean and doing their homework. There are even some indications that we may be moving toward a "kinder and gentler America." The debate over values and ethics itself may be a hopeful sign.

One thinker, Roger Heyns, president of the William and Flora Hewlett Foundation, is encouraged "by evidence of a newfound American willingness to consider ethical issues," reports the *Christian Science Monitor* (June 30, 1989). He sees evidence that "hundreds and hundreds of people are eager to renounce force and get serious about social contracts that are not codified, not in law."

Yet, Heyns is concerned that people suffering from anxiety because of the uncertainty and ambiguity of the future may be seeking simple answers in rigid traditional standards. That kind of oversimplification isn't going to work in a complex world, Heyns says. On the other hand, neither will the kind of ethical relativism that "led people to think that there weren't any real rules except, finally, the ones I myself choose to make."

It may be that American society as we know it has reached a point where we must decide whether we are in a state of decline or a state of transition.

As one observer notes, "Private institutions, such as families and churches, have a right to engage in moral education; but public institutions, such as public schools, have an obligation to do so, because they are the instruments non-suicidal societies create to perpetuate what is essential to the continued existence, and therefore the continued benefits, of the society. . . To suggest that a society lacks the right to teach children the basic morality on which its very existence depends is tantamount to suggesting that it has no right to exist." (Dr. Ander Oldenquist, Ohio State University, in the Spring, 1981 issue of *The Public Interest.*)

And the way things are today, "society" for all practical purposes means schools. "Ideally, elementary and secondary schools should supplement values instruction by parents and clergy. Practically, our schools provide the best, or only, exposure to traditional values for many students who do not have good adult examples at home nor receive religious instruction in a church or synagogue," writes Emlyn I. Griffith in the New York State School Boards Association *Journal* (April, 1987).

Teaching values is a two-pronged issue, says Marty. He uses Aristotle's definition—"The good person is someone who habitually does good things, through good means, toward good ends." One prong of the issue, he says, is the debate over what is good. That's the intellectual prong, and—as noted—to a certain point, there is considerable agreement.

The other prong is deciding how to make habitual whatever you agreed on as the good. That's the emotional prong; that is to say, an emotional commitment is required. And that's going to be the trick: figuring out and gaining consensus on how to translate ideals into action.

Marty thinks it happens "not through doctrine, not through principles, not through philosophy, but by shared stories."

And there is common ground for shared stories: we all live at the same time, in the same nation, and under the same constitution. And we have certain common experiences. "We have. . . the comings of people, the settling of the soil, the heroes and heroines. We've had slavery and abolition. We've had depression and return of prosperity. We've had wars we've believed in and grown from, and we've had wars we have disbelieved in and been set back by. In other words, we've had common suffering, common projects, common interpretations, even common affections."

One recent common experience is the tragedy of the space shuttle Challenger and its crew that included a Jew, a black, an oriental, Catholic and an Anglo. Each year there is a separate memorial service for each of the crew members and a national service at Arlington Cemetery. Marty recalls the memorial service for Elison Onizuka, a Buddhist. At that service, there was manifest grief shared by many for an individual who was very different from themselves.

"I don't think anybody in his school was a Judeo-Christian," Marty says. "He rewrote the Eagle Scout manual for Hawaii. He could have a beer with the guys. He helped his mother in her store. All the things you'd hear if the tragedy happened in your local community. Somehow these common stories can move very far from being the property of one little group. . . . Our common stories aren't only about the Puritans, they also include Martin Luther King Jr."

Marty's "stories" hark back to the early days of education, when children were uplifted and inspired by tales of biblical figures, mythological heroes, historical giants. Today's mass communications give us all access to contemporary stories that we share.

The notion of teaching and learning through stories is an old, old idea, dating back to days before there was written language when all knowledge was passed on through stories. Now we have more efficient ways of passing on knowledge. We have databanks, encyclopedias, textbooks: collections of facts and figures, compendiums of knowledge offered up in efficient lists and charts, and textbooks that are notorious for the poverty of their language and content.

Now, the newsstands are filled with how-to articles, summaries, lists, ten-steps-to-whatever. We have weeded out the extraneous, deleted the historical context, expunged point of view, and above all, attempted to avoid any hint of moral judgement.

Compare this sterile approach to the days, not so very long ago, when children learned by studying myths, literature,and the great religious texts—works rich with story, larger than life with heroes, and illuminated with victory and defeat.

Is there a relationship between the move away from story toward dry "fact" and the shift in societal values? There is little or no hard evidence to demonstrate that this is so, but it seems that there must be a difference between children who grow up reading the *Bible* and Greek mythology, and those who grow up reading comic books and watching *Teenage Mutant Ninja Turtles*. To borrow a term from the world of high tech: Garbage In, Garbage Out.

Children need heroes and heroines. They also need real-life role models, and many successful adults point to caring teachers, coaches, or principals who were important to their development.

"Students spend half again as much time with teachers as with all other adults. . . Until they take jobs themselves, schools provide their main window on grownups at work. As they near graduation, many adolescents feel that teachers have helped to set their direction in life," says *The Harvard Education Letter* (January 1987).

Novelist John Steinbeck describes a memorable teacher: "She breathed curiosity into us, so that each morning we brought in new questions, cupped and shielded in our hands like captured fireflies. When she left us we were sad, but the light did not go out. She had written her indelible signature on our minds. . . I suppose, to a large extent, I am the unsigned manuscript of such a teacher. What deathless power lies in the hands of such a person."

The trouble is, all teachers have deathless power over their students—not just the good ones. So do principals, coaches, and other adult authority figures.

A retired professor of physical education at Southern Illinois University-Carbondale says that "too many coaches today tell players it IS whether they win or lose, and many don't give a second thought to how the game is played." Edward J. Shea says such talk contributes to America's crumbling ethical standards and destroys one of the oldest premises of organized sports: its ability to build character.

Coaches are far from the only culprits. While many of us can recall educators who shaped our lives in a positive way, most of us also can recall the teacher or principal who treated us without dignity or respect, those who favored the boys over the girls in the class (or vice versa), or those who were interested only in children of influential parents.

"Teachers cannot help but have an impact on the values and character of students," write two educators from Boston University in the *American School Board Journal* (September, 1989). "Schools are places of power and decisions, of continual interaction and activity, of rules and the breaking of rules, of ideas and behavior. Issues of right and wrong are part of the very fabric of life in schools. We need to make sure these issues are being dealt with in the most positive, effective and explicit manner," declare Dean Peter R. Greer and Professor Kevin Ryan, of the university's

Center for the Advancement of Ethics and Character. They suggest that school boards should make sure "teachers and administrators are creating a moral environment in which students are cared for and learn to care for others."

In an article titled "Preaching, Practicing, and Prodding: What Works in Character Education?" *The Harvard Education Letter* (January, 1987) examines various approaches to teaching values and morals.

The authors conclude that we don't yet know for sure what works. Yet, "This does not mean that schools can or should abandon their efforts to shape the young: to say that we do not know what works is not to say that nothing works. It does mean that school people, along with parents, school boards, and students, must rely heavily on their own experience as they try to put together the bits and pieces of what we do know."

Greer and Ryan maintain that "Educators worry needlessly about what parents and local community leaders will say if a coherent strand of moral education is put into the curriculum." Parents often appreciate and will help reinforce a moral education, they argue.

Nonetheless, even if most parents approve moral education, the ones who don't tend to make all the noise. Marty points out that as schools make values a formal part of the curriculum, they should prepare for conflict and controversy. He offers some ideas for dealing with conflict:

- Reconstructing other "mediating institutions" such as neighborhoods will strengthen schools because children will come in with a basis of common values.
- Town meetings on non-controversial issues will help to build community and prepare a bed of goodwill for the discussion of controversial issues.
- Helping people overcome their fear of diversity also builds community. One way

to do that is to talk about the values that people have in common, apart from the interpretation that fogs those values.

- Teaching empathy with others will lessen the crises that loom for our society.

While we have a crisis over values, observes Marty, we also have a common inheritance of what is or is not done. That's something to build upon.

In a monograph published by the Council for Basic Education, Thomas W. Payzant, then president of the Council, urges "the recapturing of the high ground. Yes, we must be concerned about moral standards, but not those of the local paper's editorial staff, the special interest groups, and the most outspoken religious leaders. Let's use the 'Six Great Ideas' that Mortimer Adler argues will stand the test of time—truth, goodness, beauty, liberty, equality, and justice. And let's not worry about being value neutral when we teach our children about them."—JCB

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Martin Marty. Professor of the history of modern Christianity, University of Chicago, The Divinity School, 1025 East 58th Street, Chicago, Illinois 60637.

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TEACHING KIDS TO THINK: MORE THAN 'LITTLE BITS OF INFORMATION'

Four days a week, students in the Higher Order Thinking Skills (HOTS) program leave their regular classrooms for 35 minutes. With the help of specially-trained teachers, these children, fourth-to-seventh graders identified as having a greater potential to fail in school, solve interesting problems using computers and then talk with a teacher about how they did it. These talks are designed to make them think; in other words, help them make sense out of what is for many the confusing gibberish of learning.

The HOTS program, expected to be used by 300 schools by next year, is just one of several programs designed to teach students to think, something many educators incorrectly assume is taking place every day in the classroom. Not so, says HOTS creator Stanley Pogrow, associate professor of educational administration and foundation at the University of Arizona. Too often, lessons for both remedial and average students consist of rote drill teaching methods instead of challenging students to use strategies—not guesswork—for problem solving.

"These kids are so starved for conversation," Pogrow told *Education USA* (April 17, 1989 edition). "They are so starved for an adult to help them understand what in heaven's name is going on. If you do that, then they blossom to incredible levels."

Teaching students to think will become the popular educational theme of the 1990s and beyond. Educational and business leaders agree that students are getting diplomas without having developed the ability to think through a problem logically. A Barbara Walters television special titled "America's Kids: Teaching Them to Think" underscored the importance of thinking skills in occupations ranging from delivering fast food in a McDonald's restaurant to making football jerseys in a New Orleans sewing factory where workers must program computerized sewing machines. By the year 2000, the average employee—no longer the unskilled worker that aided the industrial revolution in this country—will need 13 years of schooling for a factory job.

And just as today's jobs demand a higher level of skills, so must the turn-of-the-century industrial school model, centered on learning the basics, evolve to meet workplace demands. A simple facts-and-skills oriented approach—learn this set of rules and follow them—will no longer suffice, maintains Ronald Brandt, executive editor, Association for Supervision and Curriculum Development and editor of *Educational Leadership*.

Brandt also points out one of the gross misuses of classroom time is the lack of opportunity for students to participate in discussions beyond the simple question and answer format. Brandt cites a study recorded in John Goodlad's book, *A Place Called School*. The study showed that of available instructional time, 70 percent is spent talking. "And nearly all that talk is teacher talk. Very little of it is student talk. And of the teacher talk, less than one percent is calculated to get the kids to give evidence, opinion, or anything else other than 'the answer.' One percent. Now, that, to me, is one little piece of the evidence that says we really need to find ways to teach thinking," Brandt says.

The challenge doesn't end with the decision to "teach thinking"—in fact, it begins there. Educators must decide how they are going to do that, Brandt points out. Similar goals can be accomplished in a number of different ways:

- By adding a special course in thinking skills;
- By integrating thinking skills into the written curriculum in all subject areas;
- By making sure teachers understand various thinking skills and processes and letting them decide how to fit it into their subject area.

A fourth approach, one that is often used but that Brandt does not advocate, is not doing anything—because, after all, good teaching incorporates critical thinking and problem-solving skills.

No one approach may be right for everyone, Brandt advises. The main point is educators must realize that curriculum changes will need to be made soon if schoolchildren are to emerge with the ability to tackle the complex problems of the future.

"There are many different approaches to teaching thinking but no one of them has been found to be better than any other," Brandt says. "We need to stay open to the question of whether or not you can teach thinking directly."

To see just how thinking strategies can help students in and out of the classroom, look at the study skills one Florida professor employs in her college classroom, Brandt suggests. The professor asks her students to pretend that they must take a chapter quiz, but, unfortunately, they discover they prepared by studying the wrong chapter. She gives them the correct chapter and allows them ten minutes before the quiz to prepare.

Those students who fare reasonably well on the quiz use a specific set of strategies—they scan the text for headings and subheadings; look for words in italics; and grasp the chapter topic by picking out key points and reading summary paragraphs.

The students who do poorly, on the other hand, panic, Brandt says. They feverishly try to read as much of the chapter as they can before the ten-minute clock runs out, trying to memorize the sentences but failing to get a real sense of the chapter. The words mean nothing without a context, and in the end, all they can do is hope the professor drops the quiz score from their final grade.

"We are finding that when you teach kids particular strategies in a very orderly way you can, in a matter of a few weeks or a few months, show that they do much better," Brandt explains. "The long-range question is, is that going to stay with them, and as they get more sophisticated, are they going to find ways to relate everything together?

"We know that competent people have lots of strategies. What we don't know is whether you can put a strategy into a person's head directly.

"You can do it for the short term, but it's kind of like spelling. You remember those spelling books that they published back in the 1890s with rules for how to spell? Well, that was great. The kids who were smart already knew how to spell. The kids who couldn't spell were the very ones that couldn't memorize 85 rules.

"And even if they memorized them, they never knew which rule applied to which particular problem. In other words, they don't know which strategy to use. And they don't particularly care. They don't make that extra effort to do it. Now what do we do to make them want to take the trouble? That's the big issue."

Whether or not teachers try to teach thinking skills explicitly, Brandt says, students should spend time classifying, analyzing, and comparing information. They should internalize the ideal of critical thinking—"that is, striving for objectivity, what's fair and unbiased in this situation, what does the other person think about that, and so on." Group discussions and peer problem solving are ways to develop these habits of the mind.

To increase the amount of time students spend in active discussion, many schools across the country are using cooperative learning. Rather than being grouped according to competency level, students are put into study groups of four or five students at all levels. In a mathematics program called "team-accelerated instruction," each student works on lessons at his or her own level but is available to help the others. Students master material thoroughly when they help other students understand it; they have to master it to be able to articulate it to another.

Educators must define what they mean by learning, Brandt suggests. "If you think of learning as the acquisition of little bits of information, and once you acquire enough bits of information you've learned, then what we are doing is right. But if you think of learning as something more than that—as understanding complex concepts—then you have to say we don't know all there is to know about learning at all. We're only at the beginning."

Current research is showing educators that children learn by being exposed to something new, exploring it, and gradually coming to understand it in their own way, Brandt says. "But it is hard to say exactly when they have 'learned' something," he continues. "It is very hard to convey this concept of learning to educators so that they know how to put that research into teaching."

Brandt says educators have a legitimate right to feel confused by the shift in focus that has taken place in educational research in the last several years. What they can't do is ignore the tide until they find it overtakes them and they are left floundering.

"We need to find ways to teach students to think. And we need to support teaching that leads to understanding. It's a major challenge," he says. That calls for changes not only in teaching methods but in the curriculum as well. "If schools are going to prepare students for tomorrow's world, we need to thoroughly revise the curriculum," Brandt says.

As an example, Brandt cites "Everybody Counts," a report calling for major changes in mathematics. "Kids go all the way through our schools learning a kind of mathematics, so-called, that mathematicians say is not mathematics at all. Mathematics is exploring and thinking; it's uncertainty about things. It isn't learning a particular ritual that you apply to a particular kind of problem."

All this is an enormous challenge to schools, especially in those districts that are fighting myriad problems that inhibit learning, such as poverty, drugs, and crime. One English teacher's reaction to the Barbara Walters special was that it failed to take into account inflexible curriculum requirements, concrete learning goals, time-consuming administrative duties, and exhausting social and economic problems that have given teachers less time to be innovative and refreshing. Teachers instead are demoralized, frustrated and overwhelmed with duties not directly related to educating students, this teacher complained.

But Brandt maintains educators must meet the challenges that the highly technical and complex future demands. He likened today's educators to Francis Bacon, a Shakespeare contemporary who apparently died of pneumonia after stuffing chickens with ice cubes in his attempt to understand the concept of refrigeration.

"My sense is that in this whole business of learning about the human mind—how to develop it; how to make our kids more intelligent; how to teach them strategies to make them more competent in life—we are only at the chicken stuffing stage," Brandt says. "We're a part of something that is unfinished at this point—but that is the exciting part of it."—SH

Sources

Ronald Brandt. Executive editor, Association for Supervision and Curriculum Development, 125 North West Street, Alexandria, Virginia 22314-2798.

Tactics is a thinking skills program published by the Association for Supervision and Curriculum Development. For information about the program, contact ASCD at the above address or call 703/549-9110.

Developing Minds: A Resource Book for Teaching Thinking, edited by A.L. Costa. Published by ASCD.

For more information about the Higher Order Thinking Skills Program, call Stanley Pogrow's office at the University of Arizona, 602/621-1305.

READING RECOVERY: TEACHING KIDS TO READ—AND TEACHERS TO TEACH

It's hard to make a statement about education that won't get you an argument from somebody. But on one point, there is nearly universal agreement: reading is fundamental. A child who doesn't learn to read well isn't going to do well in school.

It's not surprising, then, that there are so many theories, methods and programs designed to teach kids to read. The theories tend to come and go; the methods and programs make a splash, then dwindle to a mere ripple. And still kids graduate from high school unable to read well enough to hold an entry-level job.

One program, however, seems to be emerging from the pack with a high level of success in teaching at-risk children to read—and it also offers some clues as to how to teach teachers to teach.

Reading Recovery catches nonreaders in the first grade and gives them a heavy dose of reading and writing. The program targets the bottom 20 percent of first graders for intensive work that allows them to catch up with their peers and benefit from classroom instruction aimed at the middle of the class. The program has had a high level of success in New Zealand, where it originated, and in a pilot program in Columbus, Ohio. During the 1988-89 school year, eight Reading Recovery teachers worked in the Chicago, Champaign, Urbana, and Springfield, Illinois public schools. Some 94 percent of the 104 children who took part in the program were reading at the average level for their grade. Unfortunately, the program doesn't have funds to do formal follow-up testing, said Illinois Reading Recovery Director Jan Gaffney; but she said the program will check to see if any of those children need special education or other special services to keep up in the future. Gaffney is an assistant professor at the University of Illinois, where the Illinois Reading Recovery Program is headquartered.

In addition to its apparent success in saving children who are at risk of failing in school, Reading Recovery has also provided important information about the way most teachers teach. The program reveals that teachers do not know how to teach reading, and that teacher preparation in universities must be improved, according to Gay Su Pinnell, a University of Ohio professor who directs the Ohio Reading Recovery Program.

The key to Reading Recovery is the training program that changes teachers' views of teaching, literacy and the competence of the children they teach, Pinnell says. Once a week the class goes through a two-and-a-half-hour session observing, through a two-way mirror, a child being instructed. The class describes in detail what the pupil is doing, and talks about what the teacher is doing and about the clues the pupil is giving to what he or she is thinking. They discuss what the teacher should do, which clues are being picked up on and which are being missed. Afterwards they review the session with the teacher.

Pinnell compares it to young doctors watching a surgeon talk them through an operation in a hospital. "Through those processes, teachers learn to take risks, to articulate their own theories, and to challenge and criticize constructively. They learn that they can't just make statements. They have to provide evidence for the statements."

The training, said Gaffney, is "almost the opposite of current teacher preparation." In standard teacher education programs, she said, teachers learn theory, then go out and practice it. In Reading Recovery training, teachers develop their own theory from practice. The training has a direct relationship to the work the teachers actually do.

Pinnell claims that most teachers do not know how to teach young children to read, a fact that she blames on colleges and universities. "They don't know how to observe children's behavior and interpret it. They become increasingly dependent on materials and on tests given outside their own classroom. And we give them these scripts, and they're good, they were written by people who know a lot, but they don't help them analyze their own situations and apply their concepts to the children they teach. They have a whole cookbook of stuff, and they don't know how to use it."

Pinnell is not big on scripts. She cites a study showing that the average first grade teacher has 1,500 pages of scripted manuals. "Does any school board member want a cohort of teachers who can't do any more than read a script and apply it blindly?" Pinnell asks. She suggests that some teachers doing that get good evaluations as long as they do everything on the checklist. The only problem is, they leave the kids behind. "Who gets blamed, usually in that situation? These children, you know, 'I taught them, they didn't learn.' "

Pinnell says that education must move away from the deficit model. "Is it really productive to let teachers say it's the home's responsibility? Can we only teach children who have been read to?" Pinnell says no. But, she says, to convince teachers, you need a program like Reading Recovery where they see that the children can learn. "You can't just tell them."

As a result of the inservice training, Pinnell says that teachers no longer apply the curriculum like a sledge hammer. Instead they are learning how to problem solve and apply theories and strategies on the run. They learn to monitor their own behavior and to cross check with their peers. They adjust their teaching to individual pupils. The Reading Recovery team provides a support system with the child supported by the teacher supported by a teacher leader supported by university trainers.

We need to move away from the notion that we train teachers once and turn them loose, Pinnel says. "We have to accept the idea of continuing development as a requirement of teaching." Reading Recovery teachers have six on-going staff development sessions a year, says Gaffney. The "teacher leaders"—teachers who train teachers—and the teachers in training work as partners. "It's the only program I've ever been part of, when we visit schools, the teachers see it as a real help," she says.

In addition, says Pinnell, universities must teach teachers to closely observe and interpret children's behavior, so that their focus is on the child, not the material.

Pinnell refers to a Phi Delta Kappa study of excellent schools that concluded that such schools have staffs that believe the children can learn and work to be sure they do. She says you cannot give more tests that raise teachers' expectations: "The more standardized tests you give, the more incompetent they think the children are." Reading Recovery has demonstrated to Pinnell that it is the teacher that makes the difference.

Reading Recovery was developed in New Zealand, the world's most literate nation, by Marie Clay, a developmental child psychologist who observed good teachers teaching pupils to read. In New Zealand pupils begin school on their fifth birthday, and if they are not reading by their sixth they are put in Reading Recovery.

In September of 1984, Reading Recovery was implemented by Ohio State University and the Ohio Department of Education on a pilot basis in the Columbus, Ohio, city schools. A year later the Columbus city schools introduced the program. Studies of the Columbus experience have demonstrated its success. The average student spent

15 weeks in the program, and 83 percent of those who completed the program ended up reading at the average of their class. They continued that progress at least through the third grade, which is as far as the first classes have gone.

The program takes each student aside for 30 minutes a day of one-on-one instruction with a specially trained teacher. The materials are books, pencils and paper. A small book is introduced one day and read independently by the child the next day. The books become progressively more difficult. The pupil writes sentences about what he has read to reinforce the link between reading and writing.

Throughout, the teacher's goal is to get the pupils to develop strategies to solve their own problems and to correct themselves. What happens too often is that the children are reading and the teacher sees a student look up. That, says Pinnell, is a sign that the student lacks the strategy to solve his own problem and wants someone to solve it for him. "Those will be poor readers, dependent readers," Pinnell says.

Pinnell uses the example of Tim, a first grader labeled learning disabled, reading a book entitled *The Bicycle* in a Reading Recovery program. Tim reads, "The clown got on and the lake got on and the bell got on and the green got on." He is reading but not monitoring himself to make sure that he makes sense: "And you have many, many readers, fifth, and seventh, and tenth grade, content to produce nonsense. They go right on. They don't say to themselves, " 'Hey, wait a minute, that didn't make sense,' " says Pinnell.

From a recording of the session with Tim, Pinnell detailed the interaction between him and the teacher.

Teacher: "You read, 'The clown got on and the lake got on.' Does that make sense?"

Tim: "Oh."

Teacher: "Check the picture. Is that a lake on the bicycle?"

Tim: "It's a girl."

Teacher: "What letter would you expect to see if it was a girl?"
Tim: "g"
Teacher: "Well, could that be girl?"
Tim: "No."
Teacher: "What else could it be?"

When they finally came to the correct word, 'lady', the teacher told Tim: "All right. Read it again to make sure it makes sense."

Pinnell says that is how children solve the puzzle of written language. "Some of them need the support of a teacher as they move through the process, kind of a little coaching alongside," she says.

Reading Recovery is expensive, because of its one-to-one pupil/teacher ratio. A half-time teacher can handle about 10 kids per year, Pinnell says. Cost estimates run to $2,000 per pupil per year. But the cost of holding a child back for a year is even higher and the cost to society of non-readers who eventually drop out of school is higher still.

It's not easy to look at a six-year-old who can't get the hang of reading and see a prison inmate or a welfare recipient. But research suggests that there is a clear connection. Teaching more children to read better will go a long way toward improving the track record of public education; and "investing in the teacher is the only way it's going to happen," Pinnell says.—MDK

Sources

Gay Su Pinnell. Assistant professor of theory and practice, Ohio State University, Ramseyer 200D, 29 West Woodruff, Columbus, Ohio 43210.

Reading Recovery, Ohio State University, 200 Ramseyer Hall, 29 West Woodruff Avenue, Columbus, Ohio 43210-1177; 614/292-7807. For information about the Illinois program, call the University of Illinois Center for the Study of Reading, 217/333-7213.

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STUDENTS NEED GLOBAL VISION, NEW WAYS OF RESPONDING TO PROBLEMS

Dateline: Xapuri, Brazil.

Headline: Rural Workers' Union president murdered

Summary: The head of the rubber workers' union—long an advocate of preserving the fast-dwindling Amazon rain forest—was shot outside his home.

The lurid headline and sordid details of this December, 1988, event that occurred in a faraway place make for titillating reading, but what difference does the death of one foreign union organizer make in the lives of American schoolchildren? Ask Princeton University professor Richard Falk and he'll tell you that it makes all the difference in the world.

At a time when world events are beamed into every living room night after night and mass media has made the "shrinking" world increasingly smaller, the educational system is not equipping students with the tools needed to live in a global setting, Falk says. Too many students view the world through eyeglasses shaded with a provincial tint. Too many believe the important events in life take place only within their own physical domains, and that what happens outside those boundaries will not make an impact on their lives.

The educational community has taught citizenship by placing greater importance on the part—the territorial and cultural boundaries—in which students exist, Falk says. "In other words, we are Americans, or we are from some particular place," he explains, "and it is that affirmation that constitutes our basic identity.

"The educational system is slow in creating the understanding that there is a need to think of new ways to examine issues," Falk says. "If you think of the world as a place of conflict, we need more cooperation to find ways to protect the interests of the world by sharing the ways of people of other cultures."

Instead of emphasizing geographic, political, and individual divisions, American educators must underscore the importance of the whole so that students can be successful leaders in the future.

To Falk, the decimation of the Brazilian rain forests represents one example of the shift in thinking about world events that must take place if today's students will become tomorrow's successful leaders. The destruction of millions of acres of trees that help maintain earth's delicate environmental balance gives a clue about the nature of the wars of the future, which Falk insists will be fought to protect the environment of the world—not the boundaries of nation states. The twenty-first century will see a shift away from a "war system toward a more cooperative kind of world order that rests on practical considerations of self-interest and survival—not on the sentimental notion that it would be nice to have one world."

Territorial boundaries, and hence, parochialism, will continue to exist, Falk says. But students must learn to connect seemingly unrelated events such as cutting down trees in a South American country far from home with the intensification of the greenhouse effect in the atmosphere above their schools and homes. Educators have a responsibility to make students realize they are intricate threads woven into the world fabric, each dependent on the other—pull one and the whole starts to unravel. Once students believe that, they'll also understand that individual efforts can make an impact.

Developing a world vision in today's youth may take many forms, Falk says. Tomorrow's leaders must be able to respond to problems created by demographic changes; economic and political pressures which are generating millions of refugees a year on a global scale and producing tremendous flows from poorer places to richer parts of the planet; and depletion of renewable resources such as water, air and oil, and of scarce energy resources.

"One is now for the first time finding leadership challenged by a whole assortment of problems for which our governing institutions really don't have the background or the experience or the perspective to respond in a way that corresponds to the seriousness of the problems," Falk continues. "That different sort of urgency requires people to think of themselves sharing a destiny on the planet, and that again, is quite different."

If this message sounds like one from a doomsayer, it is not. Falk is optimistic that students will gain the insight and develop the tools needed to get past the feelings of hopelessness and despair characterized by the increase during the past decade in suicides, drug use and other forms of escapism. Students will learn to live constructively in a world marred with problems, but one that Falk says will be marked by a more cooperating environment.

Hope and confidence will be built upon the equally important realization that the world is a precarious place in which to live, he says. Reality shouldn't be sugar-coated; but neither should students be led to believe that the massive, impersonal bureaucracies in control are the only answer to emerging problems. Students should be encouraged to look past what Falk calls the "entrenched" governmental institutions to innovative, grassroots movements for solutions to global problems.

"Organized groups in civil society are very big players in this controversy over public policy and are changing our understanding both of democracy and what politics is all about," he insists. "One finds a tremendous increase in local initiatives in all parts of the world . . . a local setting influences not only the larger frame of politics, but also the way in which local communities and individuals perceive politics."

The reinforcement of the power of small community groups to create change will help children overcome the need to escape. Students need to have the "integrity to face the danger, and yet the imagination to see beyond it," Falk says.

Another important aspect of this change in attitude about how to meet the problems of the global society is to understand that science and technology—long the sources of answers and progress in an enlightened society—will no longer be the vehicle in which future generations will travel, Falk believes. In fact, he blames science and technology for an increase in materialism.

As Falk sees it, we live in a fast-food world of instant gratification—put problems in a microwave and, zap, they are gone.

"We have really developed a civilization that is premised on material satisfaction and is premised on the notion that those kinds of fulfillments express both the significance of life and provide a stable basis for human existence," Falk points out. "It seems fairly clear that these values and beliefs will have to shift to longer-term horizons, to finding significance in other aspects of life, including the sense of participating in a more global setting.

"I don't think it is possible to make these adjustments merely by appeals to self-interest or by producing the evidence of experts," he says. "It will occur only if there is a sufficient cultural and spiritual reinterpretation of what life is about."

The complex process of rediscovering the "sacredness of nature and the awesomeness of the cosmos . . . that incorporates both the dangers of the environment and the discovery of our presence in space" is already underway, Falk believes.

Integral to this process is a new set of political actors with new agendas that will produce new conflicts between the old and the new. Environmental groups such as Greenpeace and antinuclear movements are just some of the players that are making a difference, and will continue to do so in political events that transcend territorial boundaries. Students need to ascertain the value of these players and learn how to effectively work with these groups, Falk says.

While Falk's message is not new, it does appear, at first glance, to be an arcane one of little use to those who function in the real world of education with its budget crises, curriculum concerns and student ambivalence. He does not, even when pressed by several school board members, provide either concrete suggestions nor direction on how to incorporate these world issues into the curriculum, nor does he provide a way to cultivate in students an unselfish vision that they will use, as adults, to address and solve world problems.

What Falk tries to do is make educators think about the way history is now being taught; the way science is now approached; the way political theory is now examined. The old way of looking at problems—capitalism is better than Marxism; life with scientific innovation is better than without; ignoring pollution and dwindling resources is better than making sacrifices now—will not allow the world to grow and prosper in the twenty-first century.

International cooperation is the key to unlock the door of the new world Falk sees emerging in the decades ahead. Collaboration will be a fixture of international life. Educators, whether modifying curricula in history, science, political science or literature, must move beyond the idea of one nation state, one political ideal, one set of scientific responses to meet the challenges of the future.

What students need is a vision that is neither the naive and often false hope of the 1950s and early 1960s nor the cynicism that followed in the next decades.

In the end, it will be the students who will guarantee the world continues to survive, and hopefully, improve, Falk says. Educators, therefore, must make sure students understand the significance of events such as the destruction of the Brazilian rain forest will have tomorrow as well as 50 years from now. Education will have to equip students with the skills they need to meet these challenges.

"We can't rely on the old institutions of government and market to provide the responses," Falk concludes. "It will take a great deal of cultural energy to create the kind of species consciousness that this new politics looks toward to achieving as the basis for a constructive future."—SH

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Richard Falk. Professor of international law and practice, Princeton University. Center for International Studies, 110 Corwin Hall, Princeton University, Princeton, New Jersey 08544.

TECHNOLOGY

"Technological change is not additive; it is ecological. When you add a drop of red dye to a glass of water, you don't have a glass of water with a red dot in it; you have water of a different color. It doesn't add something, it changes everything. Technological changes are always vast and irreversible.".

—Neil Postman, professor of
Media Ecology at New York
University (As reported in the
published notes of C.L. Hutchins on the School Year 2000
Conference in Helsinki,
Finland).

WAKING UP IN TOMORROW'S WORLD—TODAY

"The real issue of emerging technology is not foreboding gadgets, as startling as some of them may be. The real issue is the growing educational power and sophistication of ALL our technology," says James Mecklenburger.

"What was once a necessity—sitting at the feet of a teacher—is increasingly an option. A new reality, that of electronic teaching and learning, has arrived, and increasingly Americans (not just youngsters) are learning electronically at home, at work, in libraries and shopping malls, and elsewhere, primarily outside of the halls and walls of school buildings. So the root issue for all of us, for educators, is how to blend America's tradition of schooling with the capabilities of America's information and communications technology. It is time, in my opinion, to march in the electronic parade—not to watch it emerge."

As director of the National School Boards Association's Institute for the Transfer of Technology to Education, Mecklenburger is charged with helping school districts and state school boards associations march in the parade. He is not finding it to be a simple task.

"We've had a phenomenon, in the general society, of supporting workers with all kinds of technology; microphones, overhead projectors, 'zappers' for running audio-visual equipment. A lot of that has found its school counterpoint in software and hardware that's helped teachers be better teachers—if only they have the hardware, which most don't."

Instead, says Mecklenburger, "most of the instructional technology in the society is not, and never will be in the school buildings." It's in the homes of the rich and poor alike. "Even the poorest hamlets in West Virginia have video stores," he observes. Televisions and VCR's are common, and, in affluent homes, "sometimes in every room." Camcorders, cable television, computers: "Those are, or can be educational tools. They're out there, they're all around us, our kids and our families have them. But, by and large, as educators, it's been out of our view. We only talk about the things we want to put in our school buildings.

"But the fact of the matter is, lots of folks are investing in the technologies that you, as educators, want. They're just putting it someplace else. And that's a phenomenon that's not going to go away.

"So, those that want to educate with the technologies of this society need to start looking at where the technology is, and think of how to exploit it in the name of education. Because, if you don't, somebody else will."

We're tied to the idea of the classroom, Mecklenburger observes—but in fact, classrooms themselves are just a tool. "There's no reason why, except that we invented them, that classrooms are the way we need to organize our work."

Indeed, he says, education will change so drastically because of technology that eventually we may come to think of schooling as a process rather than a place. And that place may be the home, rather than some central warehouse where all the children are stored for nine months each year.

That's pretty threatening talk, in a field where hundreds of thousands of people have a vested interest in keeping schools structured pretty much the way they are.

This resistance isn't surprising, as the changes called for are fundamental, and there are few sources of help to guide schools through them. James Bosco, writing in the *Peabody Journal of Education* (Fall, 1986), points out that vendors and computer experts may have a deep understanding of computers, but little understanding of the educational process. It will be up to teachers and administrators to figure out how to make the technology work in the schools.

But these are the very people who have a vested interest in keeping the system the way it is. For example, one of the most significant opportunities for computers to improve schooling is to make the classroom more student-centered. This challenges the traditional role of the teacher as the focus of the classroom. Teachers may see themselves burdened with yet more housekeeping tasks—keeping machines functioning properly, coordinating student access to equipment, distributing software—while losing the role as the major purveyor of information and instruction that made teaching satisfying for them.

"Teachers are still stuck in an old-fashioned role," says Mecklenburger. "The 'Third Wave' is flooding our basements, but education is still operating basically as it did several generations ago." The third wave refers to Alvin Toffler's breakdown of changes in society into three waves: an agricultural wave, an industrial wave, and the current information wave.

This changing role of the teacher, as facilitator rather than dispenser of knowledge, is hard for teachers to accept, especially as they so seldom have either the best new equipment or the knowledge and training to use it. "It's still rare in this country for teachers to have a telephone in their rooms," Mecklenburger observes.

Because one out of every four college graduates goes into education for at least some period of time, schools of education also would have to change dramatically—still another hurdle.

Fully integrating technology into the schools challenges not only the role of the teacher, but the notion of what constitutes a "basic" education. Mecklenburger has found the "Back to Basics" movement to be one of the major obstacles blocking the use of technology. But perhaps the very definition of "basic" needs to be examined.

What, for instance, will literacy come to mean when much of learning is done through images on a screen? Will it mean that students will have to know how to compose a "screen," by mixing graphics and writing to make an appealing presentation?

To Mecklenburger, one new concept, interactive video, "is most interesting; it's almost a means of bypassing literacy—perhaps we'll have to rethink the concept (of literacy) as time goes along." Interactive video allows an offscreen narrator to stop the sequence of "action" and question the viewer as to what might happen next—for example, a teacher might ask students about the next step in an experiment. The student is called upon to think critically, without having full information.

An example of the way technology threatens the status quo is IBM's Writing to Read program. IBM claims the program can teach children in first grade to read, write and spell 4,000 words. Most school boards have cited the cost of equipment as a reason not to incorporate the program into their schools. But the implications are far wider. To begin, the cost of equipment is minuscule next to the cost of retraining teachers and reorganizing the curriculum of every teacher above first grade to deal with first grade matriculates who know more than the educational system says they should. The ultimate implication of technology in education is that if it does what it says it will do, education has to retool, rethink, and become something much more than "basic." Technology has the potential to upgrade education, and that will create problems for all those who have a vested interest in keeping education basic.

Given the obstacles in his path, Mecklenburger is concerned about getting technology into schools soon enough to make a difference for the current school generation. He is bothered by a poster he saw in a school superintendent's office. The poster said:

SCHOOL: AN ISLAND OF TRADITION IN A SEA OF CHANGE

He is enough of an historian to know that unchanging institutions die off when the world passes them by.

"The perception that schools, churches and the postal service are fixed is illusory. Old institutions may persist, but just as Billy Graham has used electronic media in ways that conventional churches ignored; just as Federal Express, CompuServe and facsimile services have exploited communications technologies that the postal service ignored, so the electronic technologies of teaching and learning can hem in the school. The march of progress finds the old institutions changing marginally while new institutions develop that exploit the newest tools and the new opportunities."

Educators, as leaders of one of the pillars of our society, should not let themselves believe that they are an "island" resisting the streams of change, says Mecklenburger. "While schools seem fixed—harkening to the same tests as a half-century ago, pursing decades-old curricula in time-encrusted styles and sequences; while a 'Basics' movement is tightening the regulations and accountability schemes to assure perpetuation of school—the educating of America has changed. Schools have their equivalent of Federal Express or national TV ministries."

Mecklenburger is not without hope, however. He senses change in the wind. There are people "on the leading edge" striving to integrate technology into our education system—"ALL of the technology, not just computers." Areas of fermenting change include:

- Curriculum. Some struggle valiantly with the old curriculum, and there is "a lot of political pressure to lock down the curriculum by testing and by requirements. But a lot of other folks are virtually willing to throw out the curriculum we've lived with for decades, and see the technology either as the subject of instruction or as the opportunity to reach students in new ways."

- Administration. "Usually, it's some kind of streamlining, and the impact is that, somehow, they're trying to make data more available, on a more timely basis, and a more useful basis, for whoever may want to use it. Sometimes that simply means getting great software on stand-alone computers; sometimes it means building interesting networks that shuttle information from person to person."

- Services. "Lots of folks are trying to expand services: reaching new audiences, reaching more of the same audiences. Taking courses that reach only 20 kids and giving them to hundreds of kids; that kind of thing. Reaching out to give much better support to handicapped students, and reaching clients for the school that the school has not historically dealt with. Ceasing to define school as the place where after you're 17 you never come back."

- Teaching or learning. "We're talking about making teaching more exciting, more professional, more empowering, by virtue of having the right tools; or making learning more motivating, more individualized, more exciting, by virtue of students and teachers having the right tools."

- Making learning more portable. "Or TRANSportable. In Fairfax County, Virginia, for example, the school district is gearing up to feed, 24 hours a day, six cable channels. That's at the cutting edge of what's going on, but there are a lot of school districts around that are feeding one or two channels, at least a few hours a day or a week, providing information to both their present students, and others, at home, using technology facilities that are available in the community."

Mecklenburger says the fun in his life comes from seeing changes take place in the nation's schools as technology is incorporated. He shows examples, on videotape, of groups ranging from a large state school board association to a small school district with a total of 78 students that has made its entire educational system revolve around the possibilities inherent in electronic technology. His examples include the following:

- The Texas Association of School Boards formed The Texas Learning Technology Group to come up with ways to improve math and science instruction. The first project is a system for teaching physical science to ninth graders and, simultaneously, to create an atmosphere in which technology could be understood and appreciated by students entering the information age. The program, which has been called "the first example of the next generation of software," is being offered by IBM to schools all over the country.

Students come to school early and stay late to work on the program. Because the program is visual, students can interact with it in a way they have come to understand through exposure to television and videos.

The program calls upon teachers to take on a new role, as facilitator and manager of the classroom, rather than center-stage actor. Because students proceed at their own pace, teachers can spend more time with individual students than they were able to do when their primary role was lecturer.

- A tiny school district of just 78 students in the California mountains has become a kind of "living laboratory" says Mecklenburger.

With its small size and a fair amount of oil money in its favor, the district decided to go for it, and create the school district of the twenty-first century. "They make the case effectively that it's not the technology that matters, but what the educators think about what they're doing." Every student and teacher has a computer, both at school and at home, connected to the central system.

One teacher mentions that an exciting part of this system is that, very early in their schooling, children get used to the fact that "reading is just talk written down." (This is one of the central points in the IBM Writing to Read program.)

When students are exposed to computers in this way, the machines become "just like any other educational tool, not anything special and certainly not anything to worry over."

To stay current with the technology, teachers have two hours per week devoted to tech-training. This is an ongoing program and is, like the student curriculum, designed around the needs of the individual teachers.

- A school district in Port Hueneme, California, has created The Smart Classroom, with a goal of totally integrating technology into the classroom. The program required support from both public and private sectors in the community, and also required a great leap of faith on the part of the school board, because no other school district in such a small community had ever attempted such a thing before. "We believed in the dream and gave them our full support," said the school board president.

The Smart Classroom dream is still growing. The first step was to integrate technology into the science curriculum. "Next, we want a Smart School," said the superintendent, "and then, a Smart District, with connections into each home. Every child will then be linked to the Smart District."

Teachers are part of all planning and are not worried that the technology will supplant them, although, as in Texas, it has required teachers to learn a new role. "I have 180 students every day, and each of them, now, has individualized instruction. This would never have been possible without the technology."

Students have a new role as well—they take much more responsibility for their own education. They can progress on their own schedules. Students say one of the great advantages of the Smart Classroom is that vast amounts of data are available instantaneously, through the interconnected database library, so their curiosity is not slowed down by the need to get permission to go to the library, search for information, and copy material. It's all available right at their desk monitors.

As one teacher put it: "It's too early to tell whether the Smart Classroom will make smarter students. But there's something different in the room. It's not anything a computer could show you, it's an attitude the students have towards learning. It is what every teacher strives for. And we have it."—JLE

Sources

James Mecklenburger. Director of the Institute for the Transfer of Technology to Education (ITTE), National School Boards Association, 1680 Duke Street, Alexandria, Virginia 22314.

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THE FUTURE IS WHEN

"The future is when school reform equals school restructure," says education industry consultant Harvey S. Long.

We need fundamental change, not mere tinkering, if our schools are to carry us effectively toward a better future, says Long. There have been decades of unsuccessful tinkering with schools, he maintains.

"The problem with the model schools issue is how to implement sweeping change in all classrooms. They have had demonstration sites in education for as long as you and I have been alive," he says.

Long thinks computer technology is the key to allocating scarce resources—particularly time and money—in classrooms.

To Long, the classroom of the future looks like a library, with a computer at the front. A great deal of information would be stored on laser disks. Students would be encouraged to be inquisitive and use technology to research various topics related to their assigned studies.

This belief in technology is not surprising, given Long's experience as an IBM executive for over 30 years.

Most educators agree that computers can be instrumental in developing excellent schools for the future. And many would agree with Long that the essential question is: How can we afford the time and money to maximize computer use?

"Ten minutes using a computer every other day is not going to do any good for students," Long explains.

"The school of the future is when there is equity in technology . . . when computer use is a basic skill for all," he says. Why? Because "by 1991 there will be 50 million jobs that touch a computer keyboard."

How can school boards implement fundamental change in classrooms? First, Long says, figure out how textbooks can complement computers, rather than the other way round. "Old technology cannot be implemented in new learning," he says.

Secondly, put a computer at the front of the classroom. Long implies that the computer screen should be projected onto a larger screen so students may view it for some lessons. Students also would have a chance for regular hands-on exploration of computer programs and networks.

Long further suggests that school boards should work closely with teachers' unions to train teachers to instruct with computers. "Teachers have an installed base of knowledge which they are reluctant to change," he notes. This causes a dilemma because "In times of rapid change experience may be your worst enemy."

The answer is to "keep teachers' installed base and work out from it. . . . I personally work with the NEA and AFT in setting up model classrooms. Let's face it, these organizations aren't going to dissolve," Long says.

He believes the unions can be instrumental in helping teachers get information about and from technology. Faculties need "to change with honor" in learning how to seek and relay information.

"Every school district should have an inservice course on how you find information in the Twentieth Century," he says; and the answer will be primarily via computer network.

Perhaps the most encouraging point Long makes, from the school board perspective, is his insistence that a single computer can suffice in a typical classroom. The cost implications are more reasonable than if each student needs a terminal and keyboard. Long seems aware that even one computer per classroom is often a major expense.

Long also seems aware that business has often ignored schools, only to complain bitterly about the quality of education later on. And he says this must change because "the output of schools is the input of business."

If only corporate America would take that last message to heart, and to the bank, the future of America's schools would look much brighter.—GA

Sources

Harvey S. Long. Education industry consultant, IBM Corporation, Education Systems, 1 Central Plaza, 11300 Rockville Pike, Suite 501, Rockville, Maryland 20852.

APPENDIX

CONTRIBUTORS

Many voices have been raised to call for improvements in the public schools. A gratifying number of those who have expressed interest in the educational system were willing to back up that interest with tangible contributions.

The following organizations made cash donations that were used to underwrite "Education for the Twenty-First Century: A Symposium," and to enable as many school districts as possible to take part.

ARA Services, Oak Brook
Barber Colman Company, Chicago
Bradley & Bradley Inc., Rockford
Coopers & Lybrand, Chicago
Fay Hartog-Rapp, Seyfarth, Shaw, Fairweather & Geraldson, Chicago
Froehling, Taylor & Weber, Canton
General Reinsurance Corp.
Gottlieb & Schwartz, Chicago
Hinz Consulting Service, Inc., Chicago
Huff Architectural Group, Inc., Springfield
Insurers' Marketing Association, Rockford
Kane, McKenna & Associates, Chicago
Klein, Thorpe and Jenkins Ltd., Chicago
Kohl Foundation, Highland Park
Lord Bissel & Brook, Chicago
MacArthur Foundation, Chicago
Martin Boyer Company, Chicago

McDonald's Corporation
Miller, Tracy, Braun & Wilson Ltd., Monticello
New Trier Township High School, Wilmette
Northern Illinois Gas, Aurora
Peat Marwick Main & Co., Chicago
Pope Ballard Shepard & Fowle Ltd., Chicago
R. Theodore Clark Jr., Seyfarth, Shaw, Fairweather & Geraldson, Chicago
Randolph & Associates, Inc., Peoria
Servicemaster, Downers Grove
Stein, Roe, Farnham, Inc., Chicago
Stern Brothers & Co., Chicago
Vedder Price Kaufman & Kammholz, Chicago
Williams & Rachey, Rockford

Robinson Bus Company, Evanston, provided transportation to Northwestern University for an early bird session.

Apple Computers provided a classroom of the future display and hosted a reception.

IBM provided a classroom of the future display and hosted a reception.

Speaker services were provided by IBM (Harvey Long); the MacArthur Foundation (John Corbally); and McDonald's Corporation (Shelby Yastrow).

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Dr. Clayton Thomas, acting dean of graduate studies and acting associate vice president of research, Illinois State University, Normal

AUTHORS

Gary Adkins is assistant director of communications, Illinois Association of School Boards.

Jessica C. Billings is director of communications for editorial services, Illinois Association of School Boards.

Debi Sue Edmund is a Springfield, Illinois, based free-lance writer and editor. She has had more than 500 articles published in local newspapers and national magazines and has won several awards, including an Illinois Education Association award for feature writing on education topics.

Jack L. Edwards has taught in colleges and secondary schools in the United States and India. He is a member of the board of education of Zion Elementary District 6 in Zion, Illinois, and writes a column on computers and other subjects for his local newspaper.

Shelley Helton is a free-lance writer in Springfield, Illinois. She is a policy analyst for the Illinois State Board of Education.

Michael D. Klemens is State House correspondent for Illinois Issues, a monthly magazine published in Springfield, Illinois.

Daniel T. Layzell is currently assistant director for fiscal affairs at the Illinois Board of Higher Education. Previously, he served on the staff of the appropriations committee of the Florida Senate. He holds a Ph.D. in Higher Education from Florida State University.

James D. Nowlan is a former state legislator and political consultant. He is professor of public policy at Knox College.